STEWART CARSON.

THE

RETROSPECT

OF

PRACTICAL MEDICINE AND SURGERY,

BEING A

HALF-YEARLY JOURNAL,

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY

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From the great encouragement which the Editor has received in the sale of this work, he is anxious to make it as complete as he can, and to embrace as much matter as possible without increasing the size and expense of the volume. For this reason he has been induced to print it in a smaller type; so that each volume will contain about one-third more matter than before, and will afford a better opportunity to include every article of practical value. For the same reason he has relinquished his reviews of medical works, in order to confine himself entirely to the medical journals: but this will not prevent him including in his Retrospective Summary, at the end of each volume, every practical suggestion and improvement which may be pointed out to him, in the recently published works on Medical Science.

Park-Square, Leeds,
June, 1843.

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RETROSPECT.

PRACTICAL MEDICINE,

&c. &c.

Art. I.—ON THE CONSTRUCTION AND APPLICATION OF INSTRUMENTS USED IN AUSCULTATION.

By C. J. B. Williams, M.D., F.R.S., &c. &c.

(Being the Substance of a Communication made to the Medical Section of the British Association at Manchester, in June, 1842.)

The acoustic examination of disease having been so profoundly as well as generally studied, it is not surprising that the instruments used in it should have wanted modifications to make them exhibit better the phenomena which increased experience and skill have discovered. To make these improvements some knowledge of acoustic science is necessary ; and it might seem to be the province more of the natural philosopher, than of the physician to suggest them.

But it must be borne in mind, that a good understanding of the ends in view, as well as of the instrument, is required. To suggest what a stethoscope ought to be, a knowledge of acoustics is not more necessary than an acquaintance with disease, and experience in its investigation. A want of these latter qualifications, in my opinion, renders some recent suggestions from the Professor of Natural Philosophy at Edinburgh, of little value to practical men ; and an imperfect acquaintance with the whole of the purposes and principles of the stethoscope seems to me apparent in other late proposals for the improvement of the stethoscope.

Twenty years' attention to the principles and practice of auscultation may perhaps warrant me in offering to the section a few remarks on the acoustic principles of means used in auscultation, and on the best mode of applying them with efficacy and convenience.

Laennec, the inventor of the stethoscope, had no accurate views of the principles of its construction. He declared that the instruments which he found the best, were not made according to the commonly received laws of physics. Yet experience taught him that the solid cylinder does not convey breath sounds or voice sounds so well as a cylinder perforated and hollowed at its pectoral end. Many years ago I pointed out that this fact, which is unquestionable, is in perfect conformity with a law of acoustics, that sounds are best conducted by bodies of an elastic tension resembling that of the

sonorous body. On the other hand, bodies differing in elasticity are bad recipients of each other's vibrations. Thus wood, although an excellent conductor of sounds generated in itself, or in other solids, receives but imperfectly those produced in air. But by thinning wood, and extending its surface in contact with air, it is much more readily affected by the vibrations of air, and becomes the best medium for transferring to air the sounds of denser solids; and this is the principle of sounding-boards.

The view which I originally gave of the principle of the stethoscope represented its operation as varying with the source of sound: sounds produced in air (vocal and breath-sounds) being best transmitted by an enclosed column of air; those produced in solids (rhonchi, heart, and friction sounds) being most effectually communicated by rigid solids of the least density. This view I still hold; and I proceed to remark on the best mode in which the principle may be brought into operation. It has been lately questioned that the conducting power of the stethoscope depends at all on the air contained in the central canal and excavation. This doubt has arisen chiefly from an observation first made by Dr. Cowan, that plugging the central canal does not much impair the power of the instrument. Professor Forbes has repeated the same remark. I have made many experiments on this point, and the following are some of the results.

Stopping with a cork the pectoral end of the instrument greatly impairs its conducting power; stopping the ear end does so in a much slighter degree. But in any way stopping the tube impairs the transmission of sound; and to be assured of this, it is not sufficient to judge by general impressions as to whether a sound is louder in one way than in another: we must resort to what may be called a *test sound* (as opticians use a test object); a sound just within the limits of audibility, such as the sound of expiration in a healthy subject, or a very faint cardiac murmur. When tried by such a test, the superior conducting power of the open tube becomes obvious. But the impeding effect of a stoppage in the tube becomes most evident in the flexible stethoscope, a cork inserted into the pectoral end of which altogether shuts out faint sounds, and very perceptibly impairs those that are louder.

That the common stethoscope really conducts by its closed column of air as well as by its solid walls, is further proved by the following facts. Loud pectoral sounds, as that of the voice, heart, or a murmur, may be heard by bringing the ear end near the ear, without actual contact: the sound is then exclusively conveyed by the air, and may be totally intercepted by a plug. If a large hole be made in the side of a stethoscope, its conducting power is greatly impaired, especially for aereal sounds; but it is at once restored by closing the hole with the finger. The difference depends not only on the exclusion of extraneous sounds by the latter expedient, but also, and chiefly, on the superior power of conduction which a close column of air possesses. That the addition of a solid conductor, by that which stops the hole, is not concerned in the improvement, is

clear from the fact, that solid tubes of the most slender walls avail as well as thick ones, so long as they preserve a close column of air within them.

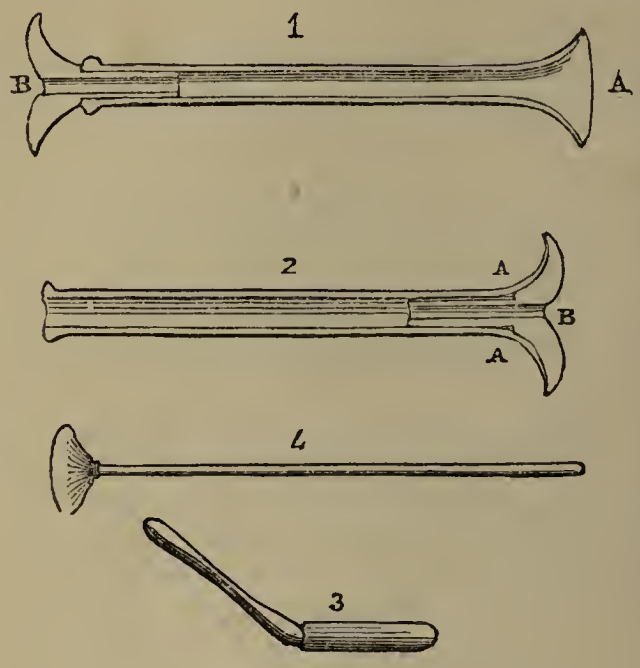
The closed state of the column of air is the chief condition necessary to give air a high conducting power. Following the assertions of acoustic writers, that the pulses of sound pass through the air in straight lines, like rays of light, I formerly suggested that the pectoral end of the stethoscope should be hollowed into a very tapering cone, and that the whole interior should be made as smooth as possible, to promote the most direct reflection of sound. But this principle is more applicable to ear trumpets, which receive sounds from the open air, than to the stethoscope, which receives vibrations from a solid enclosed surface. Air confined in a close tube vibrates as a whole, and its vibrations pass over angles, and through bends (as in a flexible tube), with a freedom which supersedes the idea of mere reflection; and although they must be transferred through a straight smooth tube more freely than through a crooked and rugged one, the difference is less than might be expected without a knowledge of the properties of close tubes.

The chief object in the formation of the hollow end of the instrument is to bring into close contact with the walls of the chest as large a surface of air as possible, and to convey the pulses of this air as directly as possible to the ear. It is at the same time desirable to avoid a large hollow within the instrument; because such a hollow causes such a conch-like or tinkling echo, from the repeated transverse reflection of the vibrations. A conical cavity answers very well for the sounds best transmitted by the air; but a trumpet end does not appear to be inferior, and it answers better for the communication of vibrations to the solid part of the instrument.

I have before noticed the inferior power of a solid stethoscope. Some writers, who consider the stethoscope to conduct only by its solid walls, ascribe this inferiority to the weight of its mass, and suggest that if this be reduced by hollowing, the closed solid is still the best instrument. To test this principle I had a thin stethoscope made of light deal, and closed at its pectoral end by a very thin plate of the same material: this proved to be decidedly inferior to instruments with an open bore. Yet this instrument reversed, with its closed end applied to the ear, and its open end on the chest, communicated all diffused sounds uncommonly well: this can be explained only on the principle of the large surface of the hollow of the instrument enabling the solid part to receive the vibrations.

But finding the considerable share which the solid walls of stethoscopes have in communicating sounds, and finding by experiment that their efficacy depends chiefly on the formation of their pectoral end, by which they receive the vibrations, I have devised a form of instrument which qualifies them for this purpose better than any instrument now in use. It is the bugle or trumpet end (as seen in fig. 1, A), the edges of which being made very thin, and applied flat on the walls of the chest, are most readily affected by their vibrations. The instrument thus constructed, of a light rigid wood,

such as sycamore, if tried with a test sound, will be found for most purposes superior to the stethoscopes hitherto used.



But most stethoscopes are provided with a perforated stopper, the chief use of which is to shut out diffused sounds, and to transmit by the central canal aereal sounds, from a limited spot: it is thus of great use in distinguishing pectoriloquy from diffused bronchophony. I find that the same object can be pretty well attained by reversing the new stethoscope, applying the ear end (B) to the chest, and the hollow end (A) to the ear: this end having some extent of flat surface, fits the ear very well, and is not hollow enough to produce much conchal sound.

An inconvenience at first experienced with this instrument was its fragility, being easily cracked or crushed in the pocket. This evil is readily obviated by making the ear end (B, as seen in fig. 2) to take off and to fit into the hollow end (A); which thus not only strengthens the thin part, but also renders the instrument more portable. For this purpose, and for that of shutting out diffused sounds, the ear end should be made stout, and of a tough material, as box or yew wood.

The stethoscope in its packed or portable state (fig. 2) is well adapted to render visible the extent and direction of the pulsations of the heart or arteries, and of the motions of respiration. Held by its broad end as a base firmly applied to the chest, its small end exhibits, in an exaggerated degree, the movements of its base. Laennec used to exhibit the impulse of the heart by the lifting of his stethoscope; but this instrument does this much more exactly, and likewise shews the direction of the impulse.

As the flexible stethoscope has been recommended by some respectable authorities, (although I believe that it is very little used,) I take this opportunity to state my objections to it, which are founded on considerable experience in its use; for since Dr. Stroud, who first employed it, recommended it to me seven or eight years ago, I have given it repeated and varied trials. When tried by a test sound, I have found it much inferior in conducting power, for all the more delicate sounds of the breath and heart. Louder sounds,

such as those of bronchial or cavernous breath and voice sounds, it exaggerates by the addition of a conchal echo, which renders it very difficult to distinguish them from each other. It is much better adapted for the heart sounds, and is certainly the best instrument for exploring venous and arterial murmurs, because it may be applied with a less degree of pressure than the common stethoscope. The chief advantage, however, is in its flexibility, which permits it to be applied to the patients in postures in which the straight stethoscope can scarcely be used. On the other hand, it has the inconvenience of requiring the use of both hands to keep it applied; so that the auscultator has no hand free to prevent the friction and contact of the clothes, &c., or to steady himself whilst he leans over the patient. On the whole, although I often employ the flexible instrument for particular purposes, I am of opinion that no one who uses it only can be an accurate auscultator.

Percussion.—Since I explained the principle of percussion in 1835, I have had almost daily opportunities of proving the accuracy of that explanation, and of deriving advantage from the varied modes of percussion which the clear understanding of the principle suggested. So delicate do I now find this test, that in many instances it discovers disease when other physical signs are negative.

The principle is briefly this: sound on percussion is derived from the elastic tension of the bodies which the stroke reaches, and depends on the conjoint vibration of these. Thus gentle percussion, and flat percussion, reaches the superficial parts only, and is toned by them: forcible percussion derives its sound from deep-seated parts also.

The character of the stroke-sound varies not only in loudness and clearness, but also, and most constantly, in *pitch; the deepest tones* being the healthiest in all cases, except a few of flaccid emphysema and pneumo-thorax. In some cases of pneumonia, pleurisy, and even tubercle, the stroke sound is much louder on the diseased than on the healthy side; this is where the clearness proceeds from the resonance of the subjacent tubes, which the condensation of the tissue of the lung enables the stroke to reach. But in all these cases the morbid character of the sound is proved by its note being higher than on the healthy side.

In cases of early phthisis, in which the auscultator may be doubtful as to the comparison of stroke-sounds of corresponding points on both sides, he may sometimes be assisted by applying his ear to the chest at the same time that he strikes. Thus, in exploring below the clavicles, he may use gentle immediate percussion there with the fingers, whilst he applies his ear in the scapular region; but on comparing the sound with that of the opposite side, he must be careful to listen, as well as to strike, on corresponding points. Explored in this way, the clearness or loudness of the stroke is less easily distinguished than the note or pitch, the difference of which is sometimes manifest when it is not so in the usual mode of examination.

In percussion of the abdomen, it is useful to employ different

degrees of pressure with the pleximeter or the hand struck. Strong pressure with forcible percussion, displaces the superficial contents (gas and liquid), and elicits the sound of deep-seated parts. On the other hand, the gentlest percussion, without pressure, will detect the superficial dulness of a layer of serum too thin to be palpable by fluctuation.

For general purposes, I consider the fingers to be the best instrument for percussion; and the various ways in which they may be used constitute one of their best recommendations. There are, however, a few cases in which an instrument for percussion will give more accurate indications; and I will describe one which is very efficient as well as very simple.

Percussion-plates, generally, are too large to be applied closely between the ribs; and when made of hard materials they cause a clacking noise by the stroke on their surface. The hammers of Drs. Burne and Winterich are not only formidable in their appearance (that of Dr. Burne is really frightful), but their strokes may vary in force, and their sounds in character, according to the direction in which the hammer falls, whether quite perpendicularly or not.

To avoid these objections, I have for a plexímeter a stout narrow piece of whalebone (about four inches long, fig. 3), slightly bent by heat, so that one end forms a handle, whilst the other is applied to the chest; the latter part may be covered with buff leather and velvet, to deaden the clack of the surface. The hammer (fig. 4) is made of an oblate spheroid of lead (three quarters of an inch in long diameter) also covered with leather and velvet, with a small rod of whalebone (four or five inches long) for its handle. The plexímeter fits like a finger on or between the ribs, and is firmly and conveniently applied to any part. The hammer head being circular, like that used by geologists, can scarcely vary in the direction of its stroke, and has weight enough to elicit deep-seated as well as superficial sounds with very little force of stroke. The elasticity of the handles of both greatly facilitates their operation.*

Medical Gazette, Dec. 16, 1842, *p.* 400.

2.—USE OF TARTRATÈ OF ANTIMONY WITH OPIUM IN THE ADVANCED STAGES OF NERVOUS FEVER.

By Robert James Graves, M.D., M.R.I.A., Physician to the Meath Hospital and County of Dublin Infirmary, &c. &c.

[The following is from Dr. Graves' work on Clinical Medicine, and is an important addition to practical medicine. After speaking of the use of tartar emetic in some cases of sthenic delirium, Dr. Graves observes :]

* These instruments may be obtained from Coxeter, near University College, and from Grumbridge, 42, Poland Street.

" In the two preceding eases I was guided by ordinary prineiples, reeognized by all physieians, and aeeording to whieh the exhibition of tartar emetie is reeommended in fever whenever there is undoubted evidenee of determination of blood to the head, produeing headaeh, loss of sleep, and delirium. In the eases whieh follow, tartar emetic was exhibited at a period of fever, and under eireumstanees that were, with respeet to the exhibition of this remedy, not less novel than important. The prineiples whieh led me to this praetiee have long been established, but, nevertheless, the praetiee is entirely new, and (I may say it with pride for it has already been the means of saving many valuable lives) it is entirely my own.

" Shortly after the eommeneement of our present session, Mr. Cookson, a pupil at this hospital, and remarkable for his diligent attention to elinieal pursuits, eaught fever while attending our wards, in whieh many eases of the present epidemie were then under treatment. His fever was of an insidious nature, not eharaeterized by any prominent symptom, nor exhibiting any loeal disease to eombat, or any tendeney to erisis. For the first seven or eight days, with the exeeption of headaeh, whieh was mueh relieved by leeehing, he seemed to be going on very well ; his skin was not remarkably hot ; he had no great thirst, nausea, or abdominal tenderness ; his pulse was only eighty-five ; and he had sweating, whieh was followed by some relief. About the eighth or ninth day the pulse rose, and he began to exhibit symptoms of an hysterie eharaeter. Now, in every ease of fever, where symptoms resembling those of hysteria eome on, you should be apprehensive of danger. I do not reeolleet having ever met with a single case of this kind whieh did not terminate in nervous symptoms of the most formidable nature. I preseribed at the time the usual antihysterie medieines, but without any hope of doing good, knowing that these symptoms were only preeursory to something worse. I also, as a preeautionary measure, had leeehes applied to his head. The fever went on, the headaeh beeame more intense, he grew nervous and sleepless, and fell into a state of great debility. On the fourteenth day of fever his tongue was blaek and pareheđ, his belly tympanitie ; he was passing every thing under him uneonseiously ; he had been raving for the last four days, constantly attempting to get out of bed, and had not slept a single hour for five days and nights. Dr. Stokes, with his usual kindness, gave me the benefit of his adviee and assistance at this stage of Mr. Cookson's illness, and we tried every remedy whieh experienee eould suggest. Blisters were applied to the nape of the neek, the head was kept eool by refrigerant lotions, the state of the belly attended to, and, as we pereeived that the absenee of sleep was a most prominent and distressing symptom, we were indueed to venture upon the eautious use of opium. It was first given in the form of hydrarg. e. eretâ, with Dover's powder, with the view of relieving the abdominal symptoms as well as proeuring sleep. This failing in produeing the desired effeet, we gave opium in the form of enema, knowing its great power in the delirium which follows wounds and other injuries. This was equally

unsuccessful with the former. He still was perfectly sleepless. We came again in the evening, and as a last resource, prescribed a full dose of black drop, and left him with the conviction that if this failed he had no chance of life. On visiting him next morning at an early hour, we were highly mortified to find that our prescription had been completely unsuccessful ; he had been more restless and delirious than ever. Here was the state in which we found him on entering his chamber at eight o'clock in the morning of the fifteenth day of his fever.—He had universal tremors and subsultus tendinum, his eye was suffused and restless, he had been lying for some days entirely on his back, his tongue was dry and black, his belly tympanitic, his pulse 140, quick and thready, his delirium was chiefly exhibited in short broken sentences and in a subdued tone of voice ; and it was now eight days and nights since he had slept. Here arose a question of great practical importance. How was the nervous agitation to be calmed and sleep produced ? Blisters to the nape of the neck, cold applications, and purgatives had failed ; opium in various forms had been tried without the slightest benefit ; if sleep were not speedily obtained he was lost. At this emergency a mode of giving opium occurred to me which I had never thought of before. Recollect what his symptoms were at this period : quick, failing pulse ; black, dry, tremulous tongue ; great tympanitis, excessive prostration of strength, subsultus tendinum, extreme nervous agitation, constant muttering, low delirium, and total sleeplessness. I said to Dr. Stokes that I wished to try what effects might result from a combination of tartar emetic and opium ; I mentioned that I had given it in cases of delirium tremens with remarkable success, and thought it worthy of a trial under the circumstances then present. Dr. Stokes stated in reply, that he knew nothing with respect to such a combination as adapted to the case in question, that he had no experience to guide him, but that he would yield to my suggestion. We therefore prescribed a combination of tartar emetic and laudanum in the following form, which is that in which I generally employ the remedies in the treatment of delirium tremens. ℞. Antimonii tartarizati grana quotuor, tinct. opii drachmam, misturæ camphoræ, ℥ viij. Of this mixture, a tablespoonful to be taken every second hour. The success of this was almost magical. It is true that it vomited him ; after taking the second dose he threw up a large quantity of bile, but it did him no harm. After the third or fourth dose he fell asleep, and awoke calm and refreshed ; he began to improve rapidly, and soon recovered."

A great number of illustrative cases are given by the author, accompanied by important remarks. It is somewhat difficult to convey in words a proper idea of the state which indicates this treatment ; particularly, if we have to instruct those who have no real familiarity with fever at the bedside. But it may be described to be a state generally met with in the advanced stages of bad nervous fevers, and more particularly in those of the upper classes of society—a state in which many symptoms of extreme nervous excitement are met with, such as subsultus, watchfulness, muttering, delirium ferox,

or even convulsions, and all this without cerebral congestion or inflammation ; although, in the earlier periods of the same case, these very conditions may have existed. This is the condition so constantly maltreated by the exclusively antiphlogistic school.

But even a certain amount of congestion does not contraindicate the remedy. In such cases, the tartar emetic is increased to the amount of four grains in the eight ounces, while the laudanum should not exceed half a drachm ; but where the nervous symptoms predominate, the laudanum may amount to one drachm, and the tartar emetic to two grains. No general rule, however, can be laid down ; and the practitioner must, in all cases, watch the effect of the medicine from hour to hour. until he ascertains whether it agrees with the patient or not.

" Where a life is at stake, you must spare no pains, and must not reject a remedy, because its power is rendered an instrument of good or evil, accordingly as it is administered carefully or otherwise."

This practice, like many other improvements, has been misunderstood, cavilled at, and its originality questioned, when its adoption became inevitable.

" Some there are who will take occasion to remark that I can have no claim to originality on this occasion. But all who have watched my practice in the hospital, nay, all who have taken the trouble of reading my lectures and successive publications on this subject, will at once acknowledge that I proceeded on this path of investigation with no other guide but an analogy derived from an observation of the effects of tartar emetic and opium in delirium tremens, a disease undescribed in the time of Marryatt. Every one the least conversant with the treatment of fever in private and in hospital practice in Dublin, London, and Edinburgh, will allow that no one during the present century ever taught or practised the exhibition of tartar emetic at the stage of typhus fever in which I have recommended it. Not a single hint at such a treatment is given in any of the numerous contributions on the treatment of typhus, which form the valuable work edited by Dr. Barker and Dr. Cheyne. Where is there even one allusion to this practice in Armstrong, Smith, Tweedie ? And what is said of it in Good, Thomas, Mackintosh, or in the Cyclopedia of the Practice of Medicine ? Where is it mentioned or inculcated in the Edinburgh Medical and Surgical Journal, or in Dr. Johnson's Medico-Chirurgical Review ? No where ; although the treatment of fever is often the subject of anxious discussion.

" So far suffices with regard to the novelty of the matter, for it is useless to argue with persons so stupid as to confound the practice I recommend with the well-known and popular use of tartar emetic as an emetic or a diaphoretic in the commencement of febrile diseases generally. That I did not come upon this method sooner, I regret infinitely, for since its adoption, my practice in hospital and in private has been much more fortunate than formerly."

Our experience fully bears out the statements of the author ; and

we have repeatedly seen cases in which opium alone failed to procure rest, yet in which the combination had the happiest effect. We had an opportunity of witnessing a most remarkable instance which lately occurred in the practice of Dr. Lees, of this city, who has kindly furnished us with notes of the case; the remedy appeared to have an almost magical effect. The patient, a gentleman of nervous temperament and high literary attainments, and suffering under his first attack of typhus, had an imperfect crisis on the 14th day.

His pulse had been 140; he was incoherent, looked wildly about him, and towards morning became extremely low, and said he was dying. He then broke out into profuse perspiration, had great tremor of the hands, and appeared in extreme terror. He got some stimulants, and soon fell asleep, awaking in four hours much refreshed, with his pulse having fallen to 112. On the sixteenth day he again became greatly excited. He struggled violently, his features twitching, and his pupils greatly dilated. His state now became terrible. The subsultus amounted to almost convulsion; his pulse 132, and miserable; opium and musk were given without effect. The head was shaved; but he continued as violent as ever, thrusting downwards in the bed, sobbing and screaming, and with the subsultus like tetanic shocks. Under these circumstances, the following was ordered by Dr. Lees:

℞. Tartrat. Antimonii, gr. vj.; Liquoris Opii sedativi, ʒj.;
Misturæ Camphoræ, ℥viij.

Of this mixture he got one ounce in a single draught. He fell asleep, and slept calmly for three hours, when he awoke in great terror; all the bad symptoms returned. Another ounce was administered; and soon after a third, with the same happy effect. Thus he continued to the evening of the next day, comparatively rational, and taking nourishment, when he began to look wild, got restless, and tossed himself about; his tongue was dry and glazed. Another dose was administered, which did not produce sleep; but the patient lay quiet, passed much urine, and from this time began to recover. The gentleman is now in perfect health. And we hesitate not to say, that in our experience of typhus fever occurring in the upper ranks of society, we never witnessed a recovery so distinctly attributable to medicine.—[Ed. Dub. Journal.]

Dublin Journal of Medical Science, March 1843, *p.* 145.

3.—TREATMENT OF SCURVY.

M. Irven has introduced a new remedy for the cure of this disease. He administers tincture of cantharides; at first, in doses of from ten to twenty drops, three times a day, increasing the quantity taken in the twenty-four hours, according to circumstances, to about eighty drops. At the same time that an improvement in the general health becomes perceptible the urine becomes clear, and is found to contain albumen, which is said to be uniformly absent from the urine of scorbutic patients.—*Lancet, Dec.* 31, 1842, *p.* 497.

4.—ON THE PHYSICAL AND PATHOLOGICAL CHARACTERS OF URINARY DEPOSITS.

By Dr. Golding Bird, F.L.S., &c. &c.

[We are glad to perceive the growing attention which is being paid by the profession to urinary diseases, and to the peculiar characteristics of urinary deposits. We have repeatedly directed the attention of our readers to the different papers on this interesting subject, which have been published in the medical journals; and we shall take the liberty on the present occasion of drawing largely from those of Dr. Golding Bird, just published in the Medical Gazette, and endeavour to spread before the reader an abstract of the most practical parts of them. The value of this kind of information arises, as Dr. Bird justly observes, "from the urine being a secreted excretion; and not like the alvine evacuations, being an excretion made up in great part of the debris and effete portions of the ingesta, and therefore liable to have its indications masked by a series of causes which are nearly without action on the urine."]

The urine, in a physiological sense, must be regarded as arising from three sources, each of which, however, acts in preserving the equilibrium of the delicately adjusted balance of the several functions of the body. The effects of large aqueous potations in producing a copious discharge of pale urine, at once shews one source of the secretion, and points out one of the great functions of the kidneys, viz. the pumping off any excess of fluid which may enter the circulation. The peculiar character of the urine passed just after the digestion of a meal is complete, partaking often of the physical or chemical characters of some element of the food, indicates a second great function of the kidney, viz. the removing from the system those portions of the ingesta which have been absorbed whilst passing through the small intestines, and thus have entered the circulation, or of excreting from the circulating mass the, often noxious, results of mal-assimilation: of the former, the fœtid urine voided after eating a meal of asparagus may be taken as an example; and of the latter, the abundant elimination of oxalic acid from the blood in many forms of irritative dyspepsia will serve as an illustration. The third and very important function performed by the kidney is its serving as an outlet, to evolve from the animal organism those elements of the disorganization of the tissues which cannot serve any ulterior purpose in the economy, and which cannot be thrown off by the skin or lungs. I need not, gentlemen, remind you, that every moment we live each atom of our frame is undergoing some change or other; that old matter is absorbed, and ultimately thrown off by the excretions, whilst an equivalent quantity of new matter is deposited to supply its place. The old matter absorbed is not thrown off as dead tissue, but its elements become re-arranged: a portion, especially its carbon, has to perform an important

secondary office in the economy before it is got rid of, whilst its azotized elements are excreted by the kidney; and this constitutes a third variety of urine in health.

Of these three forms of urine distinguished by their source, and often by their physical appearance, the first has been termed the urine of drink, *urina potus;* the second the urine of the chyle, *urina chyli;* and the third the urine of the blood, *urina sanguinis;* —and you must never lose sight of these distinctions in investigating the indications afforded by the urine. This, as well as many other branches of physiological chemistry, has been invested with an amount of interest of which it was previously destitute by the researches of Professor Liebig, who has proved to a demonstration the generally simple relation borne by the elementary constitution of blood and of the animal tissues to the secretions, as well as by the latter individually to each other; and even if the analysis on which these bold inductions are founded be, as is quite possible, shewn to be not rigorously correct, still the reasoning will hold good with regard to general cases, even if it should fail in particular instances.

A single illustration will be sufficient to point out the high degree of beauty and interest thrown round these researches by the labours of those philosophers who have devoted their time and talents to the investigation of the chemistry of life. The analyses of several chemists quoted by Professor Liebig have shewn that the ultimate composition of flesh is constant, and is identical with that of blood considered as a whole, and not regarding its proximate composition: thus, when animal fibre is taken into the stomach, it undergoes a kind of imperfect solution, constituting a stage of the primary assimilation of Dr. Prout, and is carried into the circulation, presenting nearly the same chemical composition as the blood with which it becomes mixed, and undergoes certain changes in the lungs, where it assumes probably a more highly vitalized condition, connected primarily with the conversion of its albumen into self-coagulating fibrine; which bodies, however much they may happen to differ in their physical molecular arrangement, are identical in ultimate composition; and, ultimately reaching the nutrient vessels, the elements of the food are deposited in the substance of a tissue—as a muscle, for example. Ere these new molecules can be deposited, room must be made for them by the removal of the old; and then comes into play one of those beautiful effects of vital chemistry whose simplicity now excites our delight, as much as the mystery which so long enveloped it did our wonder. The exhausted atoms of the muscle cannot be removed as fibres, but its elements must be re-arranged, so as to enter the circulation and be carried to other organs; therefore it undergoes a second assimilation; water and oxygen are conveyed to the atoms of muscle, and the result is a re-arrangement of elements, which, whilst it enables the old tissue to be removed with facility, furnishes the pabulum for other and important secretions. Thus, if to the composition of muscular flesh we add oxygen and the elements of water, we have all the

elements necessary for the production of the essential ingredients of bile and urine.

	C.	N.	H.	O.
Two equivalents of muscular tissue . . .	96	12	78	30
Four equivalents of water			4	4
Eight equivalents of oxygen				8
	96	12	82	42
One equivalent of the organic constituents of bile	76	2	66	22
One equivalent of uric acid	10	4	4	6
Three equivalents of urea	6	6	12	6
Four atoms of carbonic acid	4			8
	96	12	82	42

On this hypothesis the muscular tissue is carried into the circulation, combined with water and oxygen; the latter, by uniting with its carbon, in all probability aids in keeping up the temperature of the body; and, on reaching the glandular structure of the liver, 76 carbon, 2 nitrogen, 66 hydrogen, and 22 of oxygen, are, as it were, filtered off in the form of bile, destined to play an important part in the functions of the body before they are ultimately expelled. The kidneys remove the more highly azotised portions in the form of urea and uric acid, whilst the carbonic acid, formed by slow combustion of the carbon of the muscles, becomes exhaled from the surface of the skin or pulmonary membrane, and thus, by a beautiful exertion of that wonderful chemist, *life*, the exhausted fibre is finally expelled from the animal structure.

Let us take a view of the physiological relations borne by the urine to other secretions. We have already noticed the fact of its constituting the stream by which a host of noxious ingredients, either formed within the body, or added from without, are washed away. There is yet another property common to all secretions, viz. their power of temporarily and, within certain limits, compensating each other's action. Thus, so long as the functions of the skin and kidney bear a normal relation to each other, all goes on as in health; a limpid secretion from the one, and an insensible exhalation from the other, announce that a just balance obtains between these two functions. But let the action of the cutaneous function be increased, so that more than a normal amount of fluid escapes from the skin, the kidney compensates for this by secreting a smaller bulk of fluid; so that the urine becomes concentrated, and rises in specific gravity; and thus the balance is for a time preserved, and no greater amount of fluid is drained from the body than in health. If the liver be deficient in its power, either from a mechanical or organic cause, highly carbonized products are eliminated with the urine; and so in a host of similar cases, the possible occurrence of which must never be forgotten in investigating the characters of urine in disease.

[The next important object in the investigation of urine is to ascertain its physical characters, as its density, colour, consistence, odour, and optical properties. We need not here particularize the mode of ascertaining its density, as it must be known to every one that the gravimeter or hydrometer is especially adapted to this object. When once we have found out the density of urine, we can soon discover, by means of the accompanying table, the quantity of solid matter which is passing out of the body in a given time, through the kidney. This table is drawn up by Dr. A. Becquerel, as far as 1·032, and has been completed from the observations of Dr. Bird.

DENSITY.	Water in 1000 grains.	Solids in 1000 grains.
1001	998·35	1·65
1002	996·7	3·3
1004	993·4	6·6
1006	990·1	9·9
1008	986·8	13·2
1010	983·5	16·5
1012	980·2	19·8
1014	976·9	23·1
1016	973·6	26·4
1018	970·3	29·7
1020	967·	33·
1022	963·7	36·3
1024	960·4	39·6
1026	957·1	42·9
1028	953·8	46·2
1030	950·5	49·5
1032	947·2	52·8
1034	943·9	56·1
1036	940·6	59·4
1038	937·3	62·7
1040	934·	66·
1042	930·7	69·3
1044	927·4	72·6
1046	924·1	75·9

When we know the density of urine we can know from a single inspection of the above table, the amount of solids and water present in 1000 grains, and we can then calculate from the quantity of urine passed in twenty-four hours, how much solid matter he is parting with in that period.]

To apply the table to the discovery of the solids in a given measure, it is necessary to bear in mind that the standard pint measure holds exactly 8750 grains of distilled water. As an example, I have a patient labouring under diabetes mellitus now under my care, who, in the last twenty-four hours, has voided five pints of urine of the density 1·040. On referring to the table we find that 1000 grains of urine of that density contain 66 grains of dry solids; therefore the pint, or 8750 grains, will contain 577·5 grains; for

$$\frac{8750 \times 66}{1000} = 577{\cdot}5, \text{ and as } 577{\cdot}5 \times 5 = 2887{\cdot}5,$$

it follows that five pints of urine will contain 2887·5 grains, or rather more than six ounces of dry solid matter.

Medical Gazette, Feb. 10, 1843, *p.* 678.

[When urine is discoloured, it partakes more or less of a red, brown, or a greenish brown colour; and almost all variations of colour approximate more or less to these hues. Dr. Bird has drawn up a

table which shews at once what is the probable cause, and what are the best meant of diagnosis. If the colour is red, it may be owing to A. Purpurine, B. Blood; if to *purpurine*, it shews some portal derangements, and if constant, some organic mischief of the liver or spleen. Detected as follows : Nitric acid produces deposit of uric acid—no change by heat; alcohol digested on the extract assumes a splendid purple colour. Density moderate.—If owing to the blood, it shews hæmorrhage in some part of the urinary passages, or Fever, and is detected as follows: Nitric acid produces a deposit of albumen, coagulation by heat; the microscope discovers floating blood discs.—If urine be of a brown colour, it may be owing to its being in a *concentrated state*, in which case nitric acid produces a deposit of uric acid; after being warmed a few drops of hydrochloric acid produces a fine crimson or purple colour. Density high.—Or the brown colour may be owing to the presence of Bile, in which case a drop of nitric acid falling on the urine in a white saucer, produces a transient play of colours, in which green and pink predominate. Hydrochloric acid produces a permanent green tint.]

When the urine, by repose, becomes covered with a thin membrane-like scum, a *pellicle* is said to exist; when the substance which produces the opacity floats in detached portions near the surface it is said to form a *cloud;* and when this falls towards the base it was formerly called an *eneorema;* the term *sediment* or *hypostasis* being applied to a positive deposit collected at the bottom of the vessel. The terms pellicle, cloud, and sediment, are still retained as general terms, but not used for the purpose of distinguishing any specific form of deposit. It very frequently happens that deposits do not become visible in the urine, until after it has cooled down to the temperature of the atmosphere; this is particularly the case with those which are soluble in warm water, as the urates, but more especially the urate of ammonia, a substance which constitutes the great bulk of the red and fawn-coloured amorphous deposits. Sometimes no deposit can be detected until after a few hours' repose, as in the case of those crystallisable ingredients which either fix on the sides of the vessels or appear entangled in the urates of mucus, as in the case of uric acid when present in small quantity, and of the triple phosphate. It is quite possible also for a crystalline substance to be diffused through the urine even in large proportions, and yet on account of the minuteness of the crystals, and of their density not very greatly differing from the fluid in which they exist, they may remain suspended for a very long time. This is remarkably the case with oxalate of lime, which often remains diffused through the urine even for days, and thus frequently escapes detection.

Classification of Deposits.—For the purpose of simplifying the examination of these various deposits, it is necessary to adopt some classification, and I am accustomed to divide all the deposits occurring in urine into the three following classes:—

1. Deposit composed essentially of ingredients formed directly or indirectly from the metamorphosis of tissues—uric acid, urates, uric oxide, oxalate of lime, cystine, carbonate of lime.
2. Deposits composed of ingredients of inorganic origin; combinations of phosphoric acid with magnesia, ammonia and lime, silicic acid.
3. Deposits consisting of organised products—blood-discs, pus, mucus, muco-pus, organic globules, ferment, confervoid organisms.

First class of deposits (*non-organized products of organization*).—I shall first call your attention to those deposits which we meet with in urine, composed chiefly of uric acid. The normal proportion of this substance, which leaves the system in twenty-four hours, is 8·1 grains. There can be no doubt of the correctness of Dr. Prout's opinion, notwithstanding the statements of many continental writers to the contrary, that the greatest proportion, if not all this quantity, exists combined with ammonia. Uric acid requires, according to Dr. Prout's accurate observations, 10,000 times its weight of water at 60° for its solution; whilst there does not exist in urine quite 2500 its own weight. Hence it is utterly impossible for it to exist in a free state, without supposing the existence of causes modifying its solubility, which the state of chemical knowledge by no means justifies. If, on the other hand, the uric acid exist in combination with ammonia, we see that it must necessarily remain dissolved at ordinary temperatures in the water of the urine. Urate of ammonia is soluble in 480 times its weight of water, and the 8·1 grains of uric acid, being the mean quantity secreted in twenty-four hours, requires, on account of its weak saturating power, but 0·82 grains of ammonia to neutralize it; and the 8·92 grains of urate of ammonia thus produced require but 4·312 grains of water for solution. Hence it is obvious that there are more than four times the quantity of water present in the urine than is necessary to hold the acid dissolved, if it exist in combination with ammonia. The most plausible objection which you will find urged against Dr. Prout's hypothesis is that advanced by Becquerel and others—viz. that a single drop of nitric acid is sufficient to separate all the uric acid contained in a considerable quantity of urine, which could hardly be the case if it really was combined with a base. This, however, is an objection much more apparent than real; for having learnt that 8·1 grains of uric acid are present in 19752, or rather more than forty ounces of urine, it is obvious that less than a single drop of nitric acid ought to cause all the uric acid present in half a pint to be deposited in crystals, if it existed in combination with ammonia, or, indeed, any other base. For the quantity of ammonia required to hold the uric acid dissolved in half a pint of urine would be about 0·2 grain, which would be exactly neutralized by about 0·8 grain of fluid nitric acid, or less than a single drop.

If healthy urine be slowly evaporated in an air-pump vacuum, it soon becomes turbid, from the formation of clouds of urate of am-

monia. The same thing occurs if healthy urine of rather high specific gravity be immersed in a freezing mixture. These facts, taken collectively, appear to me to be quite conclusive in favour of Dr. Prout's view of the manner in which uric acid exists in urine.

We may find uric acid, or its compounds, present as deposits in urine, without their really existing in excess; for if the quantity of water excreted from the urine falls below one-fifth the natural proportion, urate of ammonia will necessarily appear on cooling, in consequence of there not being sufficient water present to hold the whole dissolved. Again, if a free acid be eliminated from the system by the kidneys, this will combine with the ammonia, and cause the uric acid to be deposited as a crystalline sediment.

From numerous observations it appears that the quantity of uric acid excreted in the course of twenty-four hours may vary from six to ten grains, without showing any very material deviation from health. In all states of general febrile excitement occurring in persons previously healthy, an increased exertion of uric acid, free or combined, occurs: this is peculiarly the case in many functional or organic lesions of the liver or lungs, especially if the cutaneous exhalation be obstructed. In many cases of heart disease this also occurs. In one of enormous hypertrophy, in a lad lately under my care, upwards of twenty grains of uric acid appeared in the course of twenty-four hours in the form of a coarse crystalline deposit, independently of a portion present in solutions combined with ammonia. As a general rule, in adynamic states of the system, and diseases in which ammonia preponderates, the proportion of uric acid falls much below the healthy average.

Urine depositing uric acid is generally unusually acid, and possesses a high colour, often increasing with the amount of deposit. The latter is always more or less crystalline, and does not disappear on warming the urine, which at once distinguishes it from deposits of its saline combinations. The specific gravity is generally rather high, usually exceeding 1·020: and in these cases an excess of urea is often met with; so that, on adding a few drops of nitric acid to some contained in a watch glass, crystals of nitrate of urea are formed in a short time.

Urine depositing urate of ammonia varies extremely in tint, according to certain modifications of the colouring matter present. The most frequent modifications are the following:—

Firstly, A rather pale-coloured urine of moderate density, as about 1·018, which, by cooling, lets fall a copious fawn-coloured deposit, resembling so much bath-brick grated into the fluid, and readily disappears on applying a gentle heat to a little contained in a spoon. This is frequently of transient occurrence, and appears so constantly on any interference with the cutaneous transpirations, that every old woman will diagnose the existence of a "cold" when this state of urine is present.

Secondly, The urine, when febrile excitement prevails, often assumes a brown hue, varying from the colour of ale to that of

brandy, generally being of high specific gravity, often above 1·023, and depositing, on cooling, a reddish brown deposit of urate of ammonia, constituting one of the forms of lateritious or brick-dust deposit, which, like the variety I have just described, readily disappears by heat. It is this form of urine which is rendered opaque by the addition of a drop of nitric acid, especially if added before all the urate has been deposited. This opacity depends on the separation of uric acid in an amorphous form, and may readily be mistaken at first sight for a deposit of albumen. This phenomenon is constantly presented by the urine passed in the first stages of continued fever.

Thirdly, In well-marked affections of the portal system, especially when connected with organic disease of the liver or spleen, or when suppuration, especially of a strumous character, is going on in the body, the urine is found to possess, in many instances, a deep copper colour, often verging on crimson. This, I believe, depends on the presence of a peculiar colouring principle, to which I have ventured to give the conventional term of *purpurine* (Guy's Hospital Reports, 1842), to distinguish it from the purpurate of ammonia of Dr. Prout, the murexid of Liebig, which I confess I have been unsuccessful in detecting in the pink deposits of which it was considered the pigment. When urate of ammonia is deposited from such urine, it combines with the pink pigment, forming a kind of lake, and which generally but partially disappears on the application of heat to the urine, unless a little water be previously added. This deposit varies in hue from a pale pink to a most splendid purple. To appreciate the beauty of the colour, the deposit should be collected by filtering the urine through white blotting paper. One of the specimens I now shew you is from a patient with inflammatory jaundice, and the other from a person sinking of phthisis. Many of you have had an opportunity lately of seeing a fine example of this in a patient of Dr. Addison's, in Billet ward, labouring under a well-defined tumor in the region of the liver, attended with obscure fluctuation; and whose case, as many of you are aware, attracted so much interest. In this case, as in most others where this splendid pigment is secreted, the pink deposit did not always appear; the urine, however, retaining its deep tint. This arises from no more urate of ammonia being, on some days, present than can remain dissolved; if an excess occurred, it would, in the act of being deposited, carry down with it a considerable portion of the colouring matter.

In the very case to which I have referred, copious deposits of the most splendid purple were present on December 15th, whilst on the three following days they were absent; the urine retaining, however, its crimson hue. Of this clear urine the man passed on December 16th one pint and a half, =13125 grains, of specific gravity 1·002. By the process I pointed out to you at our last meeting, you can readily calculate the amount of solids escaping in the urine, amounting to 476 grains, being 134 grains below the healthy average. On the addition of nitric, hydrochloric, or acetic acid, to this

urine, a copious precipitate of deeply coloured uric acid occurred. Liquor potassæ lightened the tint of the urine without producing any visible deposit. It was not affected by heat. If you take the trouble to evaporate a specimen of urine possessing this deep-brownish-colour, and digest alcohol on the extract, you will obtain a fine purplish crimson solution exactly resembling in tint that obtained by digesting the deposit itself in the same menstruum. Some doubt has existed regarding the real nature of the pigment colouring the urine and the deposit. Dr. Prout is inclined to consider that the colouring agent is purpurate of ammonia (murexid of Liebig and Wöhler). From a very careful investigation of this matter, which I made nine years ago in conjunction with Dr. Brett, I feel convinced that the view taken by Berzelius and some others is the most correct. You will find the result of our experiments published in the Medical Gazette for 1834. I have since repeated these observations on many fine specimens of the crimson deposits, and invariably met with the same results. As, however, Dr. Prout has, in the last edition of his valuable work, maintained his former opinion, I have felt it necessary to allude more fully to this matter than I should otherwise have done.

Fourthly, Perfectly, or nearly, white deposits are occasionally met with in pale specimens of urine, especially in gouty subjects. This deposit consists for the most part of urate of soda, and attention has been particularly directed to it by Dr. Prout. It is certainly of unfrequent occurrence.

Deposits of urate of ammonia frequently contain crystals of free uric acid, which become perfectly obvious by gently warming the urine to dissolve the amorphous deposit. They likewise frequently co-exist with oxalate of lime, and but very rarely with the phosphates. I have frequently met with these deposits of urate of ammonia, falling wholly or partly in a gelatinous state, so as to resemble masses of mucus: this resemblance is often remarkably striking. The application of heat, or the addition of a drop of liquor potassæ, by dissolving the deposit, at once distinguishes it from mucus.

Medical Gazette, Feb. 17, 1843, *p.* 729.

When uric acid occurs in the form of a visible deposit, it invariably presents more or less of a crystalline character. I have never met with it in the form of an amorphous powder, which its combinations with bases are so remarkably prone to assume. I am aware this is exactly the reverse of many statements which have been made on the continent; but as it agrees with the opinion of Dr. Prout, and with careful observations made by myself during the last ten years, I feel no hesitation in making this statement to you as correct. Uric acid never appears in a deposit free from colour; it is certainly sometimes very pale, but more generally partakes of a yellow or orange-red hue; and hence the terms of yellow or red sand, which have been applied to such sediments. On collecting such a deposit, and examining it under a moderate magnifying

power, you will be struck with the remarkable beauty and regularity of its crystalline form. It is rare to find the acid in the form of mere striated scales; in the great majority of cases it appears perfectly crystallised. You can readily discover the crystalline form of the deposit by merely placing a drop of the urine containing it, under the microscope furnished with a good half-inch object-glass. I, however, prefer allowing the urine to repose for a short time in a tall vessel, decanting the greater proportion of the fluid, and then pouring about a tea-spoonful of the lower turbid layers into a watch glass, gently warming it to dissolve any urate of ammonia that might be present. Remove the supernatant fluid with a pipette, and replace it with a few drops of water. By this process you will render the crystals beautifully distinct, and will be rewarded for the trouble you have taken by the extreme facility with which the crystals can be examined, when the watch-glass and its contents are submitted to the microscope. In this way you will meet with crystals of uric acid which vary a good deal in figure, according to the rapidity of their deposition, the quantity of the colouring matter of the urine they contain in combination, and probably, also, on the nature of the agent which induced their precipitation. Two of these forms can be obtained artificially, by filtering a warm solution of urate of ammonia into a dilute acid; rhomboids or square tables being precipitated according to the strength of the solutions employed. The most frequent form of crystal presented by uric acid is some modification of the rhomboid, the acute angles becoming sometimes so obtuse as to cause the crystal to resemble a square table or even a cube. You can either examine these crystals by transmitted or reflected light. I think the latter has some advantages over the former. To examine a deposit thus, place between the stage of the microscope and the watch-glass containing the crystals a piece of black velvet or cloth; by means of a condensing lens, throw a strong light on the crystals, and then bring the object-glass in proper adjustment, and the colour as well as figure of the crystals will become beautifully defined on a black ground.

The true nature of deposits consisting of urate of ammonia is shewn in a very interesting manner under the microscope. For this purpose, place a drop of the turbid urine in a watch-glass, and warm it. The urate will dissolve, and, on cooling, will reappear in the form of an amorphous powder. Again warm it, and as soon as the urate has disappeared, add a drop of any acid, as acetic or hydrochloric. On now having recourse to the microscope, you will find that rhomboids or tables of uric acid will be deposited instead of an amorphous powder, the acid having combined with the base and set the uric acid free.

Cause of deposits of uric acid or urates.—On this highly interesting part of the important subject before us, I might enlarge much more than would be profitable to you. So many hypothetical views regarding the proximate causes of urinary deposits have been promulgated from time to time, that a volume might be filled with them. I think, however, it will save time to begin with the latest

theory that has been announced—the now well-known one of Professor Liebig.

This philosopher admits the existence of a vital force, a *vis vitæ* in the animal frame, opposing itself to the chemical changes which all the tissues and fluids of the body would otherwise undergo. Thus, blood in the living vessel, and a muscle in a living healthy being, may remain chemically unchanged for an indefinite period; but as soon as life ceases, the fluid and the solid obey the ordinary laws of dead animal matter, and rapid putrefactive decomposition is the result. This view, I need hardly tell you, has no novelty; it is the old one of the schools. From this point Liebig set out with the opinion "that the oxygen of the air is the proper external cause of the waste of matter in the animal body; it acts like a force which disturbs and tends to destroy the manifestation of the vital force at every moment."—p. 223. And as a consequence of this view, whenever a man, as in phthisis, dies with emaciation, his tissues are oxidized at the expense of the oxygen of the air, *and thus he literally rusts to death*. To prevent this occurring, either the vital force must be generated in sufficient intensity to effectually oppose this action of oxygen on living tissues, or some substance must be present which, opposing a less amount of resistance to the action of oxygen than an organized tissue, combines with it, and thus shields the latter from the influence of the former. The mucus covering the air-passages, and the bile in the intestines, are thus supposed to be the conservative agents which protect the tissues imbued with them from destruction by oxidation. A person remains in health, and of the same weight, when the vital force is capable of exactly opposing any undue oxidation of the body; whilst if it be incapable of effecting this, oxidation occurs. In those parts of the frame not directly exposed to the oxygen of the air, this important agent is conveyed in the red particles of arterial blood, which give up their oxygen to effect the destructive metamorphosis of parts not sufficiently protected by vital force. Hence, whenever the circulation is accelerated, as in fever, a greater quantity of oxygen must circulate through the body than in health, and a more rapid destruction of tissues will result.

To explain the occurrence of uric acid, or urates in the form of sediments or concretions, Liebig supposes that, when by the effects of wear and tear of any part of the body, as by exertion, a portion of any tissue becomes unfit for its functions, its elements, under the influence of the oxygen conveyed to it in arterial blood, become rearranged, and ultimately form certain ingredients, among which uric acid is the most important. This I have more fully explained in my first lecture. We have now to follow this uric acid a step further, and it is supposed by the author of these views that, by a continued action of the oxygen, more or less of this uric acid becomes converted into urea, a highly soluble matter, and carbonic acid; the former escaping by the kidneys, the latter by the cutaneous or pulmonary surfaces. This change is assumed to be most rapid and complete where respiration is most perfect, and consequently most

oxygen taken into the system. Hence, in those animals which subsist upon azotised food, the quantity of uric acid, in relation to the urea, which ultimately appears in their urine, is in the inverse ratio of the rapidity of circulation, of the perfection of respiration, and consequently of the heat of the body. Thus the boa constrictor eats an enormous meal of animal food; but being a cold-blooded, slowly respiring animal, it takes in too little oxygen to convert the uric acid evolved by the secondary or destructive assimilation of its tissues into urea; and hence its semi-solid urine consists chiefly of bi-urate of ammonia, without a trace of urea. On the other hand, the lion and tiger, equally carnivorous as the serpent, are rapidly-respiring, warm-blooded animals; and hence, although, from their violent muscular exertions, rapid and great absorption of their tissues must necessarily occur, but a barely appreciable trace of uric acid occurs in the urine; for this acid, although abundantly generated by the metamorphosis of their tissues, is nearly entirely converted into urea on account of the free supply of oxygen by the perfect respiration of these animals. If the lion were, like man, to become omnivorous, and to partake of a mixed diet, partly animal and partly vegetable, the ingredients of the latter kind would require, for their oxidation, a considerable supply of oxygen, and thus would combine with a portion of that which, without their presence, would act on the uric acid to form urea. Thus, by shielding the acid from oxygen, less urea would appear in the urine, and an equivalent proportion of uric acid would be present. And in this manner is the presence of uric acid in human urine explained by these views. Consequently, if these be correct, it is obvious that the imperfect admission of oxygen to the tissues must be a cause of the excretion of uric acid by the kidney; and if its quantity be considerable, a sediment, gravel, and ultimately, in all probability, a calculus, must result. We should therefore expect that any thing which prevents the conversion of uric acid into urea would produce an excess of the former in the urine; and from this reasoning, an imperfect conversion of venous into arterial blood, or, in fact, any serious interference with the perfection of the respiratory process, will become a cause of excess of uric acid in the urine. Conversely, if an excess of oxygen be admitted, then all the uric acid will become converted into urea, and the urine will resemble that of the lion or tiger, to which I have just referred. Hence the supporters of these views affirm that a deposit of uric acid or urate of ammonia is "very rare in phthisical patients," which disease is regarded by Professor Liebig as a case of excessive oxidation of the tissues of the body.

[Dr. Golding Bird does not seem at all satisfied with these hypothetical views of Liebig; and if we may judge from the results of careful observations made by Becquerel and Andral, two most respectable authorities, we cannot but agree with Dr. Bird that Liebig's views are by no means supported by, but are actually in direct opposition to clinical observation. On this point Dr. Bird states,]

The results of M. Becquerel's observations, which I now lay before you, are completely opposed to the hypothesis of Professor Liebig.

That in cases of anæmia, the quantity of uric acid is actually diminished, is the general result, not only of Becquerel's experience, but is in accordance with every-day observation; whilst in all cases where feverish excitement exists, an excess of uric acid occurs. In the table of M. Becquerel, we find, in five cases of chlorosis, the quantity of uric acid secreted in twenty-four hours varied from 1·8 to 6 grains, the healthy standard being 8·1 grains. Chlorosis being a disease of anæmia, and, necessarily, oxygenation going on imperfectly, there ought, on Liebig's views, to be an excess of uric acid and deficiency of urea; yet the very reverse really occurs; for whilst a minimum of uric acid is eliminated from the system, the ratio of urea to uric acid either equals or exceeds the healthy proportion. Again, to take an extreme case, one in which a person is suffering extreme dyspnœa from pulmonary emphysema: here an imperfect arterialization of the blood occurs, whilst the livid lips and cold extremities, so frequent in this state of things, all point out the imperfect admission of oxygen to the body; consequently, if Liebig's views were correct, we ought to have an abundant discharge of uric acid, and comparative diminution of urea; and yet what is really the fact? The quantity of uric acid excreted in twenty-four hours is nearly one-half of that which is evolved when healthy access of oxygen occurs, and the proportion of urea is really larger than in health.

To pass to the next class of cases; those in which it is, on these new views, supposed that excessive action of oxygen occurs, so that the unhappy victim *oxidises* to death. I allude to phthisis, in which little or no uric acid should be present in the urine, as all would be converted into urea from the excessive action of the oxygen. Here, again, the results of experience are precisely the reverse of what M. Liebig states ought to occur, the quantity of uric acid being almost always greater than in health, and the comparative proportion of urea reaching a minimum; the ratio of uric acid to urea being, in two cases of advanced phthisis, as 1 to 3, and 1 to 7·33, instead of 1 to 30·37, the healthy proportion.

Lastly, in cases where, from the presence of inflammatory action, a more complete oxygenation of matter capable of undergoing this change ought to occur, an extreme diminution of uric acid, and proportionate increase of urea, might be expected. Here, again, the very reverse is met with: a large increase of uric acid invariably takes place, and a comparative diminution, instead of an increase, of urea.

Thus, it is evident that before Liebig's views can be admitted, the results of the observations made by Becquerel at the bedside, which I have laid before you, must be shown to be utterly worthless. There remains yet another objection, which appears to me to be a serious one, to the validity of Liebig's position regarding the effects of perfection of respiration in preventing deposits of uric

acid. It is true that in serpents, whose respiration is notoriously languid, their urine is solid from abundance of uric acid; and in the higher carnivorous mammalia the reverse takes place. Yet there exists a large class of animals, in whom respiration is most perfect, whose animal heat is superior to that of man, and the pulsations of whose hearts are much quicker; circumstances which demonstrate the free admission of oxygen into their systems. In these, therefore, no uric acid ought to escape unchanged; and yet, in opposition to all this hypothetical reasoning, this acid is excreted in nearly as great an abundance as in serpents, in whom the very opposite condition of respiration and circulation obtains: I allude to *birds*, especially to the carnivorous ones; the semi solid urine which escapes from the cloaca of the jack-daw, parrot, and many other birds, containing a large proportion of urate of ammonia. Nay, so large is the quantity thus produced by these perfectly respiring warm-blooded animals, that many islets off the coast of South America are covered to some depth with impure urate of ammonia, from the marine birds, which are their chief inhabitants. This very substance constitutes the *guano* or *huanu* now so largely imported into this country as a valuable manure. This fact, I think, is sufficient to show that the ready admission of oxygen, even in animals whose organs of respiration is most perfect, is not sufficient to prevent the excretion of uric acid, and that Liebig's hypothesis here meets with a most serious, and, to my mind, fatal objection.

Admitting, what I conceive scarcely can admit of a doubt, that uric acid exists in urine in combination with ammonia, it is obvious that if any change takes place in the system which can remove the ammonia, uric acid must, of necessity, occur as a deposit. Let us, then, inquire what are the possible sources of such a precipitating agent. First, I should direct your attention to the fact, that two acids, at least, have been proved to exist in the body in a free state, the lactic and hydrochloric; of these, whilst both are met with in the stomach, the former is excreted at the cutaneous surface. In health, these acids are necessary ingredients of the gastric juice; and in disease they very frequently increase to an extraordinary extent. This has been placed beyond all doubt by the researches of Dr. Prout. I have also recorded cases of this kind, in which I submitted to analysis the vomited fluid. In one case of scirrhous pylorus, in which the patient frequently vomited several pints of fluid in the course of 24 hours, I found in each pint a quantity of free hydrochloric acid equal to 22 grains of the acid of the Pharmacopœia, in addition to a sufficient proportion of some organic acid to neutralise nearly seven grains of pure potassa. At another time the hydrochloric acid nearly disappeared, and the quantity of organic acid existing free in the fluid was capable of saturating nearly 17 grains of pure potass.

As we are thus furnished with positive proof that a large quantity of free acid frequently is generated in the stomach, it is obvious that unless it be got rid of by the process of assimilation, or evaporated in the perspiration, it may reach the kidneys, and, by com-

bining with the ammonia of the urate, cause the precipitation of uric acid in a free state, and thus become a primary cause of gravel. And it is a fact capable of verification in every case of irritative dyspepsia, that deposits of free uric acid are exceedingly common. Thus, then, this explanation of one source of uric acid deposits is not an unbased hypothesis, but is supported by the results of experience. It may, indeed, be proved by administering to a person in health a sufficient quantity of some acid which is capable of escaping the converting power of the stomach—as sulphuric, hydrochloric, or phosphoric. In the majority of cases, this will be followed by the appearance of crystalline grains of uric acid in the urine. Hence the propriety of prohibiting the use of acids and of those matters which may generate acids in the stomach, as preparations of sugar, in persons predisposed to these deposits. That the state of cutaneous transpiration is influenced by the condition of the stomach, was long ago proved by Seguin. This philosopher shewed that, as a mean, eleven grains of matter were exhaled from the cutaneous surface in a minute. He also proved that exhalation becomes less abundant after partaking of food, and is sensibly lessened when digestion is imperfect. Hence, if an acid capable of acting as a precipitant of uric acid be one of the products of cutaneous exhalation, it is obvious that indigestion may be an indirect cause of uric acid deposits by lessening the amount of matter exhaled from the skin. This is one of the modes in which a bulky meal, or exercise during digestion, enumerated by Dr. Prout among the causes of these deposits, may act.

A totally different and very ingenious explanation of the influence of suppressed perspiration in producing deposits of uric acid, has been given by the zealous and talented advocate of Liebig's views, to whom I have before referred, Dr. Jones. He has supposed that when perspiration is checked, the lactic acid usually thus evolved is retained in the circulation, and, by the affinity of its elements for oxygen, combines with it; and thus shields the uric acid generated from the tissues from its action.

The other causes of uric acid deposits which we have to consider are referable to whatever produces an undue formation of this acid; so that the total quantity produced is greater than natural. Dr. Prout has supposed that mal-assimilated azotised ingesta, under certain circumstances, enter the circulation, and are eliminated by the kidneys, as urate of ammonia—an opinion certainly in accordance with daily experience. If the ill-digested meal is composed of food rich in nitrogen, as meat or fish, more uric acid, *cæteris paribus*, appears in the urine than if highly carbonised ingredients, as bread or potatoes, had been taken into the stomach. This is well shewn by the fact mentioned by a late writer on this subject, that a cup of strong coffee which contains a crystallized body, caffein, rich in nitrogen, will, in many persons, speedily produce a discharge of urine turbid from the presence of urate of ammonia. I need hardly remind you that this fact is altogether opposed to the illus-

trious chemist to whom I have so often referred; but, nevertheless, the truth of these statements is unquestionable.

You will recollect that, from a series of very careful experiments, Seguin determined that, on an average, eleven grains of matter were exhaled from the skin in a minute. This is equal to 15840 grains, or 33 ounces, in twenty-four hours. Hence the weight of the perspired matter is little inferior to that of the urine. Anselmino afterwards made this matter the subject of examination, and found that, as a mean, it contained ·88 per cent. of solids; and 100 grains of such solid extract contains 22·9 grains of saline matter. From these data a simple calculation informs us that in every twenty-four hours the matter exhaled from the skin will consist of

	Grain.
Organic matter . .	107·47
Saline matter . .	81·92
Water (and carbonic acid)	15700·61
	15840·00

The nature of this organic matter is but imperfectly known: it certainly contains lactic acid with some highly azotised matters, resembling those obtained by digesting muscular tissue in water, in addition to a body which, if not urea, appears to me closely to resemble it. Indeed, Fourcroy positively detected urea in the sweat of a horse. If, then, the action of the skin becomes checked, all or part of the 107·47 grains of organic matter must be retained, and, being highly azotised, will, in all probability, evolve from the system by the kidneys in the form of uric acid or urate of ammonia.

In this manner, in addition to the precipitation of uric acid by the effects of the acid normally evolved at the surface of the skin, a positive increased quantity of this acid may be generated, in the attempt to dislodge from the system those ingredients rich in nitrogen which the skin is incompetent to exercte, from the influence of some cause interfering with its healthy functions. I would throw it out, as a mere suggestion for further inquiry, whether the curious fact of animals so totally opposed in the rapidity of circulation, respiration, and animal heat, as birds and serpents, evolving the same product in their urine, could meet with a possible explanation in the state of the feathered covering of the one and the scaly covering of the other class, being such as to preclude any amount of cutaneous exhalation?

Ibid, Feb. 24, 1843, *p.* 761.

The next ingredient of urinary sediments which we have to examine is the

Oxalate of lime.

This is one of very great importance, as well from its frequent occurrence as from the severity of the symptoms with which it is often accompanied. Deposits of this substance are either made up of minute greyish calculous concretions, known as *hemp-seed gravel*, or of minute colourless, and often scarcely visible, crystals.

When you meet with a case in which the oxalate is suspected,

take care to have the night and morning's specimen of urine brought to you, the *urina chyli* and *urina sanguinis;* the former you will generally find the heaviest, sometimes exclusively containing the oxalate, but certainly always having it in the greatest abundance. Allow the urine to repose in a tall vessel, decant the great mass of the fluid, and pour some of the lowest most turbid portions into a watch-glass. Warm it over a spirit-lamp, giving the glass a rotatory motion, so as to collect the deposit in the centre of the glass. Remove the fluid with a pipette, and replace it with a few drops of water; a white glittering sediment will then be readily seen with the naked eye. On placing it under the microscope, furnished with a half-inch object-glass, the characteristic octohedral form of the crystals of the oxalate will become readily visible.

The appearances presented by these crystals vary somewhat with their size, and with their being dry or suspended in water. When of moderate dimensions, and examined under water, they appear as perfectly regular octohedral crystals, formed by two four-sided pyramids, with a rhombic base, placed base to base. If, however, they are very minute, they resemble exceedingly small cubes, of which the square outline is alone visible. On the application of a higher magnifying power, however, their real octohedral shape becomes easily distinguishable. If the crystals be allowed to dry on a plate of glass before examination, they present a very curious appearance, owing to their only partially transmitting light, on account of the inclined sides of the pyramids reflecting all those rays which do not pass parallel to the axis. They then resemble quadrilateral crystals having a square figure in the centre, the latter being transparent, and the former opaque; so that they resemble two concentric cubes, the inner one being perfectly transparent, and the outer one absolutely black; the angles of the former being opposed to the sides of the latter. On the application of a deeper magnifying power, these crystals lose this very curious appearance, and present their real octohedral figure.

Occasionally, although rarely, a very remarkable variety of the crystals of oxalate of lime are met with. They appear like dumb-bells, or like two kidneys, with their concavities opposed, and connected by a band. These are thickly striated with numerous fine lines diverging from the centre like a zeolite. I suspect that these very beautiful objects are really minute calculous concretions, and not true crystals. They generally alternate or co-exist with octohedra. When they occur of some considerable length, as $\frac{1}{40}$ inch, they are often locked together, requiring some firm pressure to separate them, and feel gritty to the touch.

The addition of boiling acetic acid, liquor potassæ, or ammonia, does not effect these crystals of oxalate, whilst the phosphates are soluble in the former, and uric acid in the latter. The addition of a drop of hydrochloric or nitric acid readily dissolves them. If a small quantity of the deposit is collected on a slip of platinum and ignited, the carbonic oxide is evolved, and the oxalate of lime becomes converted into the carbonate, which readily dissolves in acids,

with evolution of bubbles of carbonic acid gas. This may be observed in infinitessimal portions of the deposit under the microscope.

Regarding the nature of the symptoms attending the development of oxalate of lime, and their most frequent exciting cause, enough experience has now been collected to enable us to arrive at a tolerably satisfactory conclusion. The symptoms are always those of depression, with great irritability; and, although most frequently referred by the patient to the stomach, are nevertheless often of a more general character. A person, for example, will tell you, he has for weeks or months been losing flesh and health; he has become nervous and hypochondriacal to the greatest degree; he is tortured with constant feelings of impending misfortune; every thought, every action, is tinged with melancholy; his temper has become irritable and suspicious, his sexual desires and powers have failed, his appetite is capricious and uncertain. This is the picture of an extreme case; but in very many cases the patient seeks relief long before the symptoms have accumulated to this extent. Even then, however, notwithstanding the early stage of the ailment, an expression of settled melancholy often strikes you on first seeing the person. I shall not here allude further to the symptoms presented by these cases, as I have placed on record numerous instances of this form of disease in the Medical Gazette for the past year*; and to these papers I would refer for further information. One fact I have very generally observed, that, in the great majority of the cases I have witnessed, the disease was more or less directly traceable to some source of irritation connected with the sexual organ. Uterine disease in women and in men; repeated gonorrhœa, onanism, or excessive indulgence in intercourse, certainly appear to be frequent primary links in the chain of causation of this disease. I may remark, that the general symptoms detailed by Dr. Prout as characteristic of cases in which excess of urea is excreted, closely resemble those of the disease under consideration.

Regarding the immediate causes, I should refer them to the same as those which would produce an excess of urea or uric acid, and which I have before explained to you. The presence of the irritable condition of the nervous system, especially of the organic system, as shewn by the emaciation, &c., disposing the conversion of these more frequent ingredients of urine into an oxalic compound. And this is supported by the fact of the great frequency of minute crystals of the oxalate in the common dyspeptic deposits of urate of ammonia. The treatment I have found most successful accords with this view. The use of nitric acid in gradually increased doses, the administration of minute doses of mercury, followed by mineral nervine tonics, as the sulphate of zinc and iron, or the oxide of silver, comprises the general routine of the treatment I have adopted. The warm bath, with a carefully administered course of colchicum, especially of the acetic extract, in doses of a grain, with as much of blue pill twice a day, has often been of great service in obstinate cases.

I cannot too strongly impress upon you the importance of be-

* See Retrospect, vol. vi., p. 9.

coming acquainted with this very serious and frequent form of disease, as the large number of these cases in which I have been consulted since I first announced the frequent occurrence of the oxalate of lime have convinced me of its being very frequently overlooked. In the majority of these cases I have been told by the medical attendant or friends of the patient that I had to investigate an obstinate case of dyspepsia, with emaciation and hypochondriasis, in which every remedy that had been tried, although it had relieved for the time, failed to effect any permanent good.

Ibid, March 10, 1843, *p.* 844.

Phosphatic Deposits.

On an average 6·5 grains of phosphoric acid leave the system in the urine in the course of 24 hours. Although the particular state of combination in which this acid exists may admit of doubt, yet it is evident that a considerable portion of it exists in the urine with lime, magnesia, and ammonia. The two latter bases very probably exist in the same combination, forming a double salt; the ammonio-phosphate of magnesia, or triple phosphate, as it is termed.

If you add a very small quantity of ammonia to a large quantity of healthy urine the mixture becomes turbid from a deposit of the triple phosphates, mixed in all probability with phosphate of lime. On placing a drop of this turbid urine under the microscope, myriads of minute prisms of the triple salt mixed with amorphous granules of the phosphates of lime, will be seen floating in the fluid. These readily disappear on the addition of a drop of almost any acid. As these earthy salts are insoluble in water, it is evident that they must be held in solution in the urine by the free acid which generally exists; this acid is either phosphoric or lactic, or both. If from any cause the quantity of solvent acid falls below the necessary proportion, the earthy phosphates appear in the urine, forming a deposit. Hence, when the urine is alkaline, phosphatic deposits are necessary consequences. If urine be secreted with so small a proportion of acid as barely to redden litmus paper, a deposit of triple phosphates often occurs a few hours after emission; a phenomenon depending on the influence of the mucous matter present, which exciting a catalytic action like a ferment, induces the decomposition of urea, and the formation of carbonate of ammonia, which by neutralising the solvent acid, throws down the phosphates. The precitation of the phosphates thus takes place in a manner analogous to that in which carbonate of lime is thrown down, the action being here limited to a neutralisation of a free acid: indeed, where phosphates of lime form the great bulk of a deposit, a certain portion of carbonate is generally present.

It is however, by no means necessary for urine to be alkaline for a deposit of phosphates to exist; indeed, in the great majority of cases, urine which deposits the triple phosphate is acid at the time of emission, and often for long after. This may appear rather paradoxical, when we recollect the ready solubility of triple phosphate in a very weak acid; but admits of a ready explanation when the fact

that a fluid may redden litmus, and still contain no uncombined acid, is borne in mind. Thus, a solution of hydrochlorate of ammonia will redden litmus paper, and yet it contains no free acid; and as this salt exists in the urine, it is quite possible that it may be one of the causes on which its acid reaction depends, where deposits of phosphates exist. It has been rendered very probable, by the interesting experiments of Dr. Rees, that this very salt may in some instances be really the solvent of the earthy phosphates, as they are to a certain extent soluble in solutions of sal-ammonia. These solutions possess the very remarkable property, first pointed out by the excellent chemist to whom I have just referred, of becoming opaque by ebullition, from a deposition of a portion of the earthy salt. The very same phenomenon often occurs in urine which contains an excess of phosphates. Indeed, it is not unfrequent to meet with urine which does not contain any visible deposit, and yet on the application of heat appears to coagulate not from the presence of albumen, but from the deposition of earthy phosphates. The addition of a drop of nitric acid immediately dissolves this deposit, and distinguishes it from albumen. A different explanation to this phenomenon has been offered by Dr. Hargrave Brett, and much undoubtedly is perfectly true in many cases, although the hypothesis of Dr. Rees is applicable to the greater number. Dr. Brett's explanation is founded on the solubility of phosphates in water impregnated with carbonic acid. It has long been known that carbonic acid frequently exists in a free state in the urine, and in a large number of specimens examined by Dr. Brett and myself we succeeded in readily isolating it. These experiments were made several years ago, in consequence of having noticed some curious phenomena presented by the urine of a student of this hospital (since dead) a pupil of the late Mr. Bryant, of Kennington. This gentleman in endeavouring to raise a heavy sack of Epsom salts, strained his back, and soon after fell into a state of marasmus, with occasional hectic, which ultimately exhausted him. During the last six months of his life he passed a very large quantity of pale acid urine, which by keeping soon became alkaline. This urine was limpid when first passed, but became opaque as soon as it had cooled, still, however, retaining its acidity, so that the deposition of the phosphates did not necessarily depend upon the development of an alkali. On warming the fresh urine an evolution of carbonic acid gas took place, accompanied by a deposition of phosphates. When the two portions of the fresh urine were placed as soon as passed in separate bottles, and left open, and the other closely corked, the urine contained in the latter remained transparent, and that in the former became opaque.

Whenever the triple phosphate occurs in the urine as a deposit, it is always found to be composed of crystals which are generally sharply defined, and extremely regular. You must, however, bear in mind that these crystals may exist in large quantities, and yet escape detection in consequence of their extreme transparency. In cases of this kind the deposit which forms by repose generally presents the appearance of a mere mucous cloud, and it is only dis-

tinguished from it by the addition of an acid, which immediately dissolves it. On decanting such urine and placing the lower turbid portion in a watch-glass, the crystals may be detected by moving the latter near a lighted candle, when a series of glittering points will become visible from the reflection of the light from the facets of the minute prisms of the triple salt. On placing the watch-glass under a microscope the crystals may be readily recognised. The depositions of the phosphates may become accelerated by warming the urine in the manner I explained to you when speaking of the oxalate of lime. The exact resemblance presented by the deposits of phosphates to mucous clouds is so very close that the most practised eye can scarcely distinguish between them; indeed scarcely a week passes but I find myself completely at fault on attempting to distinguish between them by bare inspection. When phosphate of lime exists mixed with the triple salt, the deposit often remains for a long time diffused through the urine, so as to resemble rope-like masses of purulent mucus. Not only do deposits of phosphates resemble mucus and pus in physical appearances, but they frequently co-exist. Indeed it is very frequent to find prisms of triple phosphate entangled in the meshes of the mucous cloud which forms by repose in all urine. When the triple phosphate co-exists with mucus or pus, the microscope will readily detect its presence.

Occasionally, where a small excess of the triple phosphate is present, it is found on the surface of the urine, forming a delicate iridescent scum or pellicle, reflecting coloured bands of light, like a thin layer of oil, or the surface of a soap-bubble.

When a considerable quantity of ammonia is added to urine, a deposit occurs from setting free a triple phosphate of magnesia, which differs from that to which I have just been alluding, in containing half an equivalent more of ammonia; it is in fact a *sesquibasic*, or, as it is commonly termed, a bibasic triple phosphate of magnesia and ammonia. This is evidently formed by the ammonia playing a double part; it not only neutralises the solvent acid, but combines with the normal phosphate to form a basic salt. This can be readily distinguished from the neutral salt by its crystalline form, as it always presents the form of stellæ, generally six-rayed, often elegantly pinnated, in some cases presenting the appearance of foliaceous crystals resembling fern leaves; this variety, however, being almost always the result of decomposition, when the urine has been kept a long time.

This basic phosphate invariably, and I believe necessarily, exists with alkaline urine; it very rarely occurs in recent urine, and so far as I have had occasion to observe, is always a secondary product.

There are no definite microscopic characters by which phosphate of lime can be recognised in deposits; it always appears as a mere amorphous cloud, made up of extremely minute particles, sometimes presenting a globular arrangement. In this form they are frequently found adhering to prisms of the triple salt, and their nature can be readily made out by the addition of a drop of very dilute hydrochloric acid, in which both phosphates readily dissolve,

and by this property are at once distinguished from all organic globules, which are insoluble in that menstruum. These deposits are so readily recognisable with the assistance of the microscope, that it can scarcely be deemed necessary to have recourse to their chemical characters, which are often made out with extreme difficulty, from the small quantity of deposit we have in most cases to operate on. If any doubt should, however, remain regarding the nature of any deposit of this class, it may be sufficient to recollect that of all the deposits possessing a true crystalline form which have yet been examined, the triple phosphate is the only one which is soluble in acetic acid, and of all amorphous deposits, the phosphate of lime is the only one which does not disappear on the addition of liquor potassæ.

The urine, in cases where an excess of phosphates of either kind exists, differs in its physical character very materially. Certainly no general rule can be assigned for the colour, density, or quantity of the urine secreted in these cases, taking them in a mass; although I think there are certain facts connected with the presence of the phosphatic deposits which serve to connect the colour and quantity of the urine with the pathological conditions producing, or at least co-existing with them.

As a general rule, where copious phosphatic deposits, whether magnesian, calcareous, or both, exist for a considerable time, the urine is pale, often whey-like, and of low specific gravity. This is especially the case where organic lesion of the kidneys exists. On the other hand, when the deposits are of occasional occurrence, often disappearing and recurring in the course of a few days, the urine generally presents a deep amber colour, and is not only of high specific gravity, but often contains an excess of urea, and presents an iridescent pellicle on its surface by repose. This is especially the character of the phosphatic urine secreted under the influence of some forms of irritative dyspepsia, and where the phosphates themselves may be traced to mal-assimilation. Again, phosphatic urine may be met with varying from a pale whey-like hue to a deep brown or greenish brown, exceedingly fœtid, generally but not constantly alkaline, and loaded with dense ropy mucus, often tinged with blood, and in which large crystals of the triple phosphate and amorphous masses of phosphate of lime are entangled. This variety is almost always met with either under the irritation of a calculus, or where disease of the mucous membrane of the bladder exists.

It was long ago remarked by Berzelius, that phosphatic deposits were often present in the urine passed in one part of the day, and absent in other specimens. I carefully watched a series of cases where the triple phosphate existed in the urine, with a view to determine the accuracy of this statement, and am convinced that the following may be assumed as a safe induction from these observations. *That where the presence of deposits of phosphates is independent of the irritation of a calculus, or of organic disease, it is most abundant in the urine passed in the evening (urine of digestion),*

and absent or replaced by uric acid, or urates, in the morning urine (urine of the blood), the urine being always of tolerably natural colour, never below, and often above the mean density. Where the presence of phosphatic salt depends on the irritation of a calculus, or of organic mischief in the urinary passages, the urine is pale and whey-like, of a density below the average, often considerably so, and the earthy deposit is nearly equally abundant in the night and morning urine.

Ibid, March 31, *p.* 11.

5.—ON THE UNRIPE FRUIT OF THE DIOSPYROS VIRGINIANA.

By John P. Mettauer, M.D., Virginia.

[The unripe fruit of the *persimmon*, which is so well known for its intense roughness, in the temperate parts of the United States, has been seldom alluded to by writers as a therapeutic agent. Dr. Mettauer was first induced to order this medicine in a case of cholera infantum, when all other astringents had failed. He says:]

Our first trial consisted of the use of the simple infusion, formed by pouring a teacup of boiling water upon half a dozen of the half-grown persimmons slightly crushed. As soon as the infusion was cool, we directed a tea-spoonful of it to be given to an infant rather more than a year old, sweetened with refined sugar, every second hour, until the watery discharges from the bowels under which it was rapidly wasting should be arrested, or the infusion be found to disagree. This experiment was most satisfactory, and the result truly gratifying. The persimmon had only been administered twice before the bowels were restrained; and after the third dose it was suspended, until an alvine discharge could be procured by an enema. After this, the remedy was only administered occasionally, as the diarrhœa threatened to recur, alternating with it from time to time enemata, or mild aperients. In a fortnight after this agent was first administered, the child was able to run about the house, and very soon recovered perfectly.

Since the first trial with this new remedy, we have had many opportunities for using it in similar cases, and even in common diarrhœa, and the results have uniformly been decidedly favourable and salutary.

After various experiments and trials with this substance, we have adopted four standard preparations for using it; that is, the tea or infusion; the syrup; the vinous and acetous tinctures.

The infusion is a very active and efficient form, and will be found both agreeable and convenient for administration: it can only be employed, however, during the season which affords the fruit, and for this reason only, it is to be regarded, perhaps, as the least unexceptionable of the preparations of this article. Nevertheless, the infusion may be used with great advantage during the summer and autumnal months—which period of the year is most prolific of the

forms of diarrhœa in which astringents are allowable. It may be prepared by infusing from one to two ounces of the fresh immature fruit slightly crushed, in a common teacup of boiling water; and of the cool infusion sweetened with refined sugar, from one to three tea-spoonfuls may be given to infants once an hour, or after longer intervals, until the restraining effect is produced. Occasionally the tea may be rendered aromatic by adding cassia bark, pimento, ginger, and the like; or it may be animated with French brandy, gin, or wine, to make it more palatable. When to be used with adults the doses must be augmented to from one to three table-spoonfuls; and given after the intervals already stated.

The syrup may be prepared by converting the infusion already described into a syrup, by adding to it refined sugar, and gently boiling them down to a proper consistency for keeping. This is decidedly the most convenient and useful form of using the persimmon; it is also the most agreeable, as the sugar greatly modifies the rough taste. This syrup may be variously combined for administration, and is ready and at home at all seasons of the year. It also possesses the astringency of the persimmon in great purity, and will retain it for an indefinite period of time without the least deterioration.

In preparing the syrup, care should be taken not to urge the process of converting the infusion into a syrup too rapidly; gentle and gradual boiling answers best: indeed, the fluid should just be kept to the boiling point; and the process must be conducted over a sand bath, or a salt-water bath; and glass vessels should invariably be used for the purpose.

For infants, the doses of the syrup may be very nearly as we have advised of the infusion; perhaps they should be somewhat smaller. With adults we have invariably used from two to four tea-spoonfuls to the dose.

The vinous tincture may be prepared by digesting one pound of the green persimmon recently procured and a little crushed, in one pint and a half of port, or any other wine, exposed daily to the solar heat for fourteen days. After this the tincture may be filtered for use. This is an elegant preparation, and possesses the astringent powers of the persimmon in great purity, and in a most convenient form for administration. It is not, however, applicable to every variety of diarrhœa, by reason of the stimulating menstruum used in its preparation. This preparation is more especially applicable to the treatment of adult cases of diarrhœa, though we have occasionally employed it with infants likewise. The dose for adults is very nearly the same as advised of the syrup. With infants the dose should rarely exceed a tea-spoonful, and must invariably be small to commence with, say not more than one-third of a tea-spoonful; and the medicine should always be sweetened with refined sugar.

The acetous tincture is prepared by digesting two pounds of the recent fruit a little crushed, in two pints of strong pure apple-vinegar, fourteen days exposed to the solar heat; the tincture may then

be filtered for use. This preparation is chiefly designed for external use, especially for gargles and cataplasms. It is most valuable in tonsillary affections, especially when they follow scarlatina, or chronic catarrh, used as a gargle. It is also exceedingly useful as a cataplasm in whitlow, or inflammations of the mammæ threatening milk abscess. To form it into a cataplasm, it will only be necessary to convert any quantity of the tincture into a poultice, by uniting with it when hot, the requisite proportions of any kind of farinaceous material; even the fruit may be used. We have also employed it in the early stages of dysentery after a brisk cathartic, and with decidedly beneficial effects: in this disease it promises to be eminently useful. It is a more efficient remedy in this disease than the solution of common salt in vinegar, to which, however, it assimilates itself very much in its remedial action.

The astringency of the persimmon is peculiarly adapted to the treatment of every form of diarrhœa. In the diarrhœa of infancy, we have often used the infusion and syrup with distinguished benefit. The tinctures we have also occasionally employed, but not with very decided benefit with these tender subjects, chiefly, we think, because we were unwilling to hazard their use with them in commanding doses. We have frequently united the infusion and syrup, with the syrups of rhubarb and senna, or the infusion of senna; and occasionally with calomel, with benefit. With stimulants and tonics these preparations may also often be associated with advantage. In some exceedingly bad cases of protracted Mississipi diarrhœa, we have used the persimmon with the most triumphant and salutary effects. In these cases we generally premise one or two doses of blue mercurial powder, about twelve grains, before commencing with the persimmon; and the infusion, syrup, or vinous tincture given in port wine, one of the forms of using it generally adopted by us. Should the remedy restrain the bowels very suddenly, aperients must be interposed; and for this purpose, nothing answers so well as the syrup of rhubarb, or the compound syrup of senna.

Occasionally, we have found it useful to combine grain portions of ipecacuanha with the persimmon, with a view to its diaphoretic effects: with adults, especially, it will be found exceedingly beneficial to use such a combination.

In the chronic stage of dysentery, we have employed these forms of the persimmon very beneficially. When used in this disease, they must be united with the syrup of rhubarb, or senna; or, combined with the oleaginous emulsion; and generally, paregoric in sufficient doses to impress the system decidedly, should be given with them at night.

In uterine hemorrhage, and especially in menorrhagia, we have employed the infusion, both as an internal remedy, and by way of injection, per vaginam, with great benefit. In these fluxes it is destined to be eminently useful from the promptness and great potency of its action as an astringent; much, however, remains to be known of the remedial operation and applicability of the persimmon as a therapeutic agent.

American Journal of the Medical Sciences, Oct., 1842, *p.* 297.

6.—REMARKABLE CASE OF RECOVERY OF SUSPENDED ANIMATION.

By H. G. Douglas, M.D., Physician to the Stranger's Hospital, Hâvre.

(Being an Extract from a Letter to Dr. Todd.)

It is popularly believed, that after two or three minutes' submersion in the water life is extinct; and under this impression, means for resuscitation, if at all employed, are for a very limited time persisted in. Now, as to the measurement of time in such cases, it has always appeared to me very fallacious. No one ever takes out his watch to observe the moment when the person sinks in the water, although some one may look at it when he is taken out of it, but generally, the consternation and anxiety is so great that the duration of the submersion is a matter of guess or supposition with every bystander. In the case I am about to relate, I have taken the time from the average number of minutes it required, on repeated trials by different persons, after the accident, to run from the spot where it occurred to the different places the messengers ran to in search of grappling irons to pull him up by before they were procured. This time varied from twelve to fourteen minutes; and I should think the latter might fairly be allowed as comprising the whole time between the immersion and his being dragged up by the grappling iron which caught him by the waistband of his trousers.

The subject of this case, John Wilson, a seaman belonging to the Duchess of Orleans packet-ship, from New York to Havre, returning on board his vessel, which occupied a stage berth (that is, an inclined plane of perhaps 25 degrees, formed of planks, supported by cross spars, stretching from the quay to the ship, for the purpose of landing cargo by) in a state of intoxication fell over the side into the dock, where the water was from twelve to sixteen feet deep. It being Sunday, there were few sailors about the place. Some stragglers saw the accident, and gave the alarm. Two sailors, who had *not* perceived it, jumped in at hazard, but were unsuccessful in finding him, owing, as it appeared afterwards, to his having sunk into the mud. A man was then sent to seek at one of the guard-houses for a grappling iron; he was unsuccessful at the two first places, but succeeded at another, and Wilson was hauled up in the manner I have described. It was evident, from the appearance of the head and the superior extremities, that he had sunk into the mud. He was carried to the guard-house nearly opposite the vessel, and from thence he was conveyed, on a stretcher, to the Strangers' Hospital, a distance of half a mile at least from the dock, On his being brought in, at 10 minutes past 3 P.M., I directed him to be stripped and laid on a bed. *There was not the slightest appearance of animation.* Whilst water was being made hot, and bags of hot salt got ready, I desired four of the men to commence rubbing the body with dry flannel cloths. The hospital having been then very recently established, and at such a distance from the Docks, we were unprovided with any apparatus for the recovery of suspended

animation. These four men were relieved every half hour by four of their shipmates, and constant friction was thus kept up. Bags of hot sand placed round the body, and lavements of hot water, to which was subsequently added, Spt. Terebinth. and Tinct. of Assafœtida, formed the whole treatment. Inflation of the lungs was tried, but not persisted in, it not appearing to be attended with effect, and interfering with the rubbing, on which I placed great dependence. I was frequently on the point of abandoning all hope, but I saw, or thought I saw, slight convulsive twitchings in the right inferior eyelid and around the mouth, similar to those caused by weak galvanic shocks on muscular fibre. This idea, perhaps, animated me. The relays worked on well, and at a quarter past 11 at night, we were amply repaid in seeing respiration, eight hours and a half from the time of immersion, though extremely feeble, established: before 12 o'clock he swallowed a tea-spoonful of warm brandy and water. It required, for some time, great care to keep up the feeble spark that animated the frame, but it was two days before intelligence was restored: within twenty-four hours reaction set in so violently, that I was obliged to order four leeches to each temple, and to take six ounces of blood from the arm. It was well that blood was abstracted so cautiously, for the pulse suddenly fell, and became almost imperceptible, the respiration becoming greatly hurried; stimulants were immediately had recourse to, with effect. Typhoid symptoms supervened, which we had to combat for six weeks. It unfortunately happened, that one of his ship-mates placed a hot sand bag in contact with his right side, and caused a severe eschar, extending from the axilla nearly to the spinous process of the ilium : this was a source of severe suffering to the poor fellow, and considerably retarded his cure: the intercostals on that side acted imperfectly, and caused great pain, and he had in addition to all to contend against pulmonary congestion: however, at the expiration of four months, he was discharged cured, from the hospital; and a short time ago came to see me on his return from New York.

He stated, whilst in the hospital, that the first sensation he could refer to was the sense of heat in the intestines; I suppose from the lavement containing the turpentine and assafœtida.

I am aware that this is not a solitary although it be a rare case; and that examples are given by Desgranges and Foderi of recovery after fifteen minutes' immersion. Still, I have no doubt my narrative will be received with interest, as an additional instance of what may be done by the persevering use of those means which science suggests in such cases.

Note by Dr. Todd.—Electricity should always be employed in cases of suspended animation. If brought to bear upon the medulla oblongata, it will frequently succeed in exciting the respiratory acts, when other means have failed. Perhaps the most convenient method of using it is by means of the electro-dynamic machine, by placing one wire at the back of the neck high up, and the other at the diaphragm. It was employed with marked advantage in a case

which occurred lately at the King's College Hospital. An infant, a few months old, got some tincture of opium by mistake; she was brought into the hospital almost lifeless; the respiration even failed to such a degree, that for two minutes she did not breathe once. Mr. Russell, and Mr. Johnson, the resident medical officers, applied electricity in the manner above described. The first and immediate effect was to excite the respiration, and soon afterwards the whole spinal cord became affected, so that at each passage of the electric current the limbs were raised convulsively. Respiration was completely re-established by these means, but the child died several hours afterwards with congested lungs.

Medical Gazette, Dec. 23, 1842, *p.* 448.

[Leroy d'Etioles suggests that by means of galvano-puncture we might stimulate the diaphragm to act still more energetically. He introduced a fine needle on each side between the eighth and ninth ribs until it reached the fibres of the diaphragm. He then established a galvanic current between the needles by means of a pile of 25 to 30 pairs of plates, an inch in diameter. The diaphragm immediately contracted, and an inspiration was accomplished. He then interrupted the circle, when the diaphragm, urged by the weight of the abdominal viscera and aided by gentle pressure made on the abdomen by the hand, returned to its former position, and an expiration was effected. In this way the two respiratory acts were made to succeed each other, and regular respiration was re-induced. The experiment, however, failed; but it shews the power of electricity in exciting the respiratory process, and the acupuncture needle might probably be in some cases an improvement when carefully employed in the method recommended above by Dr. Todd.]

7.—ELECTRO-MAGNETISM IN A CASE OF POISONING, WITH SUGGESTIONS FOR ITS USE IN ASPHYXIA.

By Thomas S. Page, M D., Valparaiso. (Communicated by John Hogg, Esq.)

[The following observations will shew the wonderful efficacy of this agent in some cases of poisoning, and will confirm the remarks made in a former number of this Retrospect and in the following article, on the efficacy of electricity in rousing the patient from his stupor when under the influence of opium. An electro-magnetic apparatus ought now to be in the possession of every surgeon: that made by Messrs. Kemp & Co., South Bridge, Edinburgh, is a very neat and portable machine, by which we can apply electricity to any part of the body, or carry a current through any extent.]

A. T., an Englishman, the subject of this communication, aged 22 years, and of robust frame, is a clerk in one of the most respectable commercial houses in Valparaiso. He had a slight gleet, for which he prescribed for himself pulverised cubebs, in doses of half an ounce,

night and morning, and experienced from them neither good nor bad effects. On the night of the 16th of March, 1842, he went to an apothecary's shop and asked for cubebs. Not having confidence in the lad in attendance, he requested permission to examine the label on the bottle, and read thereon "Pulv. Cubeb." He then ordered an ounce, divided into two parts, and with these returned home at midnight. He immediately took one of the powders, placed himself in bed, and, as was his custom, took up a book to read, but, as he expresses it, had not read two lines before he felt a dizziness and inclination to sleep. I accidently discovered him the following morning about twelve o'clock with these symptoms: face red and swollen; lips dark-purple; mouth containing a viscid frothy saliva; tongue has a dry and chapped appearance in the centre, and the teeth are slightly coated with a brown sordes; veins of the forehead and temples turgid; eyes rolled upwards, injected, and their pupils contracted to a point; skin moderately warm and moist, with clammy perspiration; feet cold; pulse very slow, moderately full, and dispersed by the least pressure; respiration very slow, short, and gasping. By agitating him violently he was aroused for a moment, uttered some incoherent expressions, and sank back into comatose sleep.

These were the symptoms when I first saw him. Dr. Houstoun of the Royal Navy, now practising in this place, and Dr. Barrabino, of the U. S. Navy, then attached to the U. S. schooner, *Shark*, came to my assistance. We administered the sulphate of zinc as an emetic, and hot mustard and water to arouse the sensibilities of the stomach to its impression. Large draughts of this, and titillation of the fauces, produced vomiting, and a small quantity of the powder apparently was brought up. The stomach-pump was at hand, but as vomiting was readily provoked it was not used. The patient was made to sit on the edge of the bed with his feet hanging in a tub of almost boiling water strongly charged with mustard. One cup was applied to each temple, and about two ounces of blood abstracted. Large sinapisms were spread over the chest and stomach and inner parts of the thighs. A very strong liniment of ammonia, cantharides, and turpentine, was applied to the whole length of the spinal column, until the skin became very red and inflamed. When the stomach seemed to be cleared of all traces of the poison, the mustard draught was suspended, and a large quantity of olive, with castor oil, administered, but only a part remained. The patient now appeared to be sinking. The surface was cold and covered with a damp sweat; the face was pallid, with a purplish tinge; the jaw and eyelids were fallen, which the patient, by powerful sternutatories and severe blows on the face and shoulders with the open hand, was with difficulty made to raise. Ammonia and brandy and water were now given, with light broths, and an injection composed of turpentine and ammonia. This produced a slight discharge from the bowels. The stimulating liniment already mentioned was repeated to the spine and over the surface of the body. The pulse was hardly perceptible at the wrists, if, at times, it was at all to be felt. The stimulants were continued.

It was now 3 p.m. There were no signs of reaction, and the features wore the aspect of death. Under these discouraging circumstances, and when every effort seemed vainly expended, we now determined to dress the patient, and, supported by two strong assistants, to take him from his room, continue the stimulants and light broths, and endeavour to walk him in the cool air. At first he made feeble but unsuccessful efforts to direct the movements of his legs, but at length could not be aroused, made no effort to stand, and sank almost lifeless into the arms of his assistants. He was carried to his room and placed in a slightly reclining posture on his bed. His breathing was now short and hurried; his mouth wide extended and jaw fallen; nothing seemed capable of arousing him; the exhaustion was extreme; the pulse could be felt feebly at the wrist, maintained there probably by the agitation which he had just undergone. Dr. Houstoun had left a short time previous, Dr. Barrabino remained with me.

It was now 4 p.m., and worn out with fruitless efforts we desisted entirely from further exertion. At this conjuncture I thought of my electro-magnetic battery, and proposed its application to bring about reaction, for I felt we were justified in such desponding circumstances to make it a matter of experiment. Cerebral congestion was urged as an objection, but admitted not to be sufficient, in such a desperate case, to set aside the experiment. It was immediately tried, and with the happiest results. With an assistant rapidly rotating the wheel, I applied the balls at first to each side of the neck, and ran them down behind the clavicles. The arms and body now moved convulsively, but the patient lay as unconscious as before. I now passed one ball over the region of the heart, and the other to a corresponding point on the right side. In an instant his eyes opened widely, and with a ghastly expression of countenance; his head and body were thrown convulsively toward me, and he groaned. He now sank back into his reclining posture, and he was again asleep. The balls were re-applied in the same situation with similar results—a third and fourth time, and he cried, "No more." Reaction was now positively established; the heart had received a strong impulse; the pulse was becoming rapidly developed, and the whole surface warm.

We now determined to desist, and watching him attentively, allow him to remain quiet for an hour. Reaction continued satisfactorily, and when the hour had expired, he could be awaked by shaking his body and calling loudly his name. There was no further occasion for the battery. He was aroused at intervals; and at eleven o'clock in the evening was sufficiently awake to relate where he had got the medicine the preceding night, but was still drowsy, and when not disturbed inclined to sleep. Thus he passed the night, and on the following morning was pretty well. He then told me that he heard many things the preceding day that were said by persons about him, but he neither felt the power to open his eyes nor move his tongue to speak, although up to 3 p.m., when powerfully agitated and spoken to, he would reply in short and sometimes broken sen-

tences, and occasionally correctly. He further says that the last thing he has any recollection of was my remark, whilst they were attempting to walk him in the corridor, that nothing more could be done but to make the experiment. From that time all was blank to him, until, as he expressed it, "he felt as if a gun had been fired off within him, which thrilled through and shook him to the very extremities." This was the application and effect of the electro-magnetic battery.

Before closing this subject, I would beg leave to add my impression that electro-magnetism will not only be found a most useful agent in cases like the above, but in some forms of disease, particularly those of a highly congestive character, where oppression of the organs and the nervous system prevent reaction and speedily destroy life. I need not occupy space in adducing cases illustrative of my meaning. In practice I think we frequently see cases where death seems to be caused by an *obstruction* of the functions or organic movements which support life, more than by an *exhaustion* of the organic functions or of life itself. And in such cases electro-magnetism might communicate an impulse which would renew those sympathetic actions between the organs (if no positive lesion exist in any of them) upon which the continuance of life depends.

In all cases of asphyxia, electro-magnetism must be useful; and I am strongly impressed with the belief that it might be applied in very many instances to still-born children with the happiest effects; for this purpose an instrument might be used of a very portable form,—that used by me in the case related consists of a large *horse-shoe magnet*, mounted upon a stand, in a vertical position with an *armature*, fixed upon an axis between the poles, so as to revolve in front by means of a wheel. The *armature* consists of two cylindrical bars of soft iron, connected by a cross-bar, and in the *centre* of the bar is an insulated ferule; as near the end of the bar as possible is fastened the "*breakpiece*." Around each of the cylindrical bars is wound *two thousand two hundred and fifty feet of wire*, covered with cotton thread, to prevent the current of electricity from passing from one wire to the other; the end of *one* of the coils is connected with the "*breakpiece*," and the other with the *ferule*. From one of the pillars, which are in *front* of the armature, the *springs* are made to act on the ferule and breakpiece. From the other pillar the spring connects with the *centre;* the *handles* are fastened by the *set screws* in the base of the pillars. There are four set screws in the back of the upright block of wood to set out the magnet, so as to make the armature revolve as close as possible to the magnet. The shock is communicated on ordinary occasions by grasping large brass handles which connect with the instrument by short coils of wire, which are painted red. To apply it to different parts of the body long wires, covered with cotton-thread, and terminating in brass balls, are used. Two glass cylinders enclose the wire near the balls, for the operator to hold by while administering the shock.

Lancet, Feb. 4, 1843, *p.* 672.

8.—EFFICACY OF ELECTRICITY IN POISONING BY LAUDANUM.

By James Russell, M.B., House-Physician to King's College Hospital.

[The following case is interesting in shewing the value of electricity as an excitor of the nervous centres.]

Mary Ann Hugdon, aged two months, admitted at eleven, P.M. A dose of laudanum, amounting to twelve drops, had been administered by mistake four hours and a half previously. The medicine produced deep sleep, and in the space of two hours, convulsive movements of the extremities.

When admitted the infant was quite insensible and motionless. The surface was cold and exsanguine; the impulse of the heart could not be felt; breathing was very difficult, and was performed with intervals of half a minute at least between each respiration; the pupils were very small, and she had lost the power of deglutition. The usual remedies were employed without success, and in a quarter of an hour the child appeared to be quite dead; but whilst she was being removed she was heard to rattle in her throat, and immediately afterwards breathed deeply. This encouraged us to renew our attempts to restore animation. Our measures were, however, attended with very partial success. Respiration at first improved, but soon became again very difficult and irregular, and in an hour's time the condition of the patient was very little better than it was when we first saw her.

My colleague now proposed to try the effect of galvanic shocks passed through the body. An electro-dynamic apparatus was employed; one pole being placed over the upper part of the cervical region of the spinal column, and the other over the ensiform cartilage of the sternum. The greatest benefit resulted almost immediately. Rapid action of the diaphragm followed each application of the poles of the battery: a few short inspirations being drawn, followed by a deep breath. At this time five hours and a half had elapsed since the administration of the laudanum. The remedy was employed during an hour and a half, shocks being passed through the chest, and along the course of the spinal column, whenever the breathing flagged. At first the stimulus appeared to influence the diaphragm alone; but in a short time the arms were extended, and soon afterwards the legs also, whenever the poles were applied to the surface of the body. The child opened her eyes, and seemed to notice surrounding objects: she uttered some cries, and the surface became warm. The head no longer sank on the shoulders, but was supported by the efforts of the patient, and with her lips she clasped the fingers placed in her mouth.

About 3 P. M., eight hours and a half after the laudanum had been taken, respiration became established, though not with regularity, and the further use of electricity was not required; but in half an hour a new train of symptoms set in; the pupils dilated widely, and the child fell into a state of exhaustion, without any of the symptoms

of coma: the breathing was performed by sighs; the surface was again cold, and she became quite insensible. From this state it was found impossible to rouse her. However she lingered till 4 P. M., when she died, quite worn out with her sufferings, twenty-one hours after the administration of the laudanum."

Medical Gazette, March 24, 1843, *p.* 925.

9—TREATMENT OF PHOSPHATIC DEPOSITION IN THE SYSTEM.

By Alexander Ure, Esq.

Every medical man familiar with the treatment of urinary disorder must confess, that among the most puzzling cases he encounters are those characterised by a deposition of the earthy phosphates; and that while it is an easy matter to render acid urine *alkaline*, it is by no means so easy to render alkaline urine *acid*.

M. Rayer, in his recent elaborate work on Diseases of the Kidney, has given, under the head of Néphrite Simple Chronique" (tom. I., p. 372), the reports of eight cases of individuals, in whom the urine was alkaline and depositing phosphates. Out of these eight we find no less than five in which the remedial means resorted to effected no change in the qualities of the urine; in one, great improvement ensued; two only were cured, each of whom was under thirty years of age.

In a paper of mine, published in vol. XXIV. of the "Medico-Chirurgical Transactions,"* it was stated that when benzoic acid or a benzoic salt is administered internally, hippuric acid is formed, and may be discovered in the urine. It was, moreover, suggested that the therapeutic application of the above fact might prove beneficial in the treatment of certain forms of gravel and in disordered conditions of the renal secretion connected with a gouty habit. Some interesting particulars, in corroboration of these views, have been since recorded by Dr. Walker, of Huddersfield, and by Mr. Soden, of Bath.† These gentlemen, however, exhibited the benzoic acid in union with balsam of copaiba. The following case, which has been attentively watched along with me by my intelligent friend, Mr. Farquhar, of Albemarle-street, will, it is hoped, serve to illustrate the pure *dynamic* effects of the remedy in a clear manner:—

H. H., aged thirty-seven, of spare make and sedentary habits, consulted me on the 9th of May, 1842, relative to a disorder of the urinary secretion. He said that about ten months previously he noticed, for the first time, a whitish deposit in his water, which, ere long, concreted on the chamber-pot, forming a hard grey crust, most difficult to remove; the urine had a very offensive odour, and varied occasionally in appearance, presenting sometimes a greenish, at other times a brownish colour; at the above date it was slightly

* See Retrospect, vol. iv., p. 33. † Ibid, vol. vi., p. 212.

opaque and of a pale yellow hue, emitting a pungent ammoniacal smell, alkaline to litmus, and effervescing briskly upon the addition of a few drops of hydrochloric acid; almost as soon as discharged it threw down a white floeculent sediment, consisting of phosphate and carbonate of lime; it did not afford any uric acid; its specific gravity was 1.023; it was voided without pain or difficulty, and in a full stream; there was little or no increase of the mucous secretion, and no albumen. The patient's appetite was good, his tongue clean, and he slept well; but he was pale, complaining of general lassitude and languor, and of a sense of weakness across the loins; his bowels were generally confined.

1000 grain measures of the above urine, evaporated to dryness by a water bath at a temperature not exceeding 160° Fah., left only thirty-six grains of dry extract, and exhaled, during the process, a great quantity of ammonia, as proved by a slip of moist litmus paper held over the dish becoming instantaneously blue.

He was directed to take an aperient dose of rhubarb and ten grains of benzoic acid, twice in the day, and to live well, but plainly.

May 12. Has taken the medicine without suffering the slightest inconvenience. He says that the urine, within a few hours after the first dose, became clear, and ceased to deposit any chalky sediment. It is now natural in all respects; acid to litmus; specific gravity 1·022.

After six days longer he discontinued the use of the benzoic acid. Towards the end of the month the urine became again alkaline, and I was induced to try him with the usual routine of medicines recommended in cases of this description, in order to see whether the urine could be brought to a permanently normal state. He was accordingly directed to take nitric acid in full doses thrice a-day, and an opiate at night. These, after a sufficient trial, produced no change. Hydrochloric acid, sulphuric acid combined with sulphate of iron, bark, tartaric acid in conjunction with sal-ammoniac, were each in turn freely administered, but to no purpose, for the urine continued alkaline and loaded with white sabulous matter. He eventually resumed taking the benzoic acid, and with immediate good effect. Professor Mitscherlich, of Berlin, visited London in October last, when I had the advantage of this distinguished chemist's inspecting the above patient's urine along with me, and verifying the remarkable change produced.

Dec. 1. The patient again applied to me on account of a return of the turbid alkaline urine. I found its specific gravity 1·024. Two ounces evaporated *in vacuo*, left twenty-eight grains of extract, consisting of animal matter, salts, with but little urea. Ordered to recommence the benzoic acid.

4. Urine is now natural; remaining limpid and acidulous after standing for twenty-four hours. The acid stain is permanent on litmus paper. Its specific gravity is 1·020. Two ounces yielded by evaporation forty-nine grains of extract.

Thus, after the administration of the benzoie aeid, the urine, although of an inferior density, afforded nearly double the amount of solid residuum that it did previously.

11. A slight sediment has made its appearenee in the urine, whieh proves upon mieroscopic examination to be erystals of ammoniaeo-magnesian phosphate, unaecompanied by the amorphous phosphate or carbonate of lime. To suspend the use of the benzoie aeid, and to take twenty minims of hydroehlorie acid diluted with water thriee a-day.

25. Urine turbid, alkaline, effervesein briskly with nitrie aeid, nothwithstanding he has been taking hydroehlorie acid regularly during the last fortnight. The sediment eonsists chiefly of phosphate and earbonate of lime, and is deposited only from the urine seereted during the course of the night. To take eight grains of benzoic acid atbed-time and to discontinue the hydroehlorie aeid.

30. Urine transparent and aeid, remaining so after the lapse of many hours. Speeifie gravity 1.018. It eontains the natural proportion of phosphate and uric acid. On aeeount of some uneasiness in the loins he was ordered to rub in the tartar emetie ointment.

January 12, 1843. The uneasiness formerly eomplained of is removed. He has ceased to take any benzoic acid for five days past. The urine is somewhat cloudy. At the suggestion of Dr. Prout I was led to prescribe for him the solution of acetate of ammonia in half ounce doses.

20. Urine still eloudy, notwithstanding the use of the spirit of Mindererus. In eonsequenee of his suffering from some irritation within the ehest, he was desired to employ the same eounter-irritant salve, to take small doses of tartar emetic in solution thriee daily, and a dose of benzoic aeid every night.

22. Feels much better in all respeets; the pulmonary oppression is gone; urine is natural, and eontinues limpid and aeid after several days repose.

It may be observed, in eonelusion, that his general health and appearanee are materially improved, and he is now enabled to cheek all tendeney to ealeareous urinary sediment by simply swallowing a few grains of benzoic acid at bed-time.

Remarks.—It has appeared to me expedient to give the above ease at some length, as it offers several highly instruetive points for consideration. The subjeet is a man in the prime of life, strieken with slow consuming disease; complaining of languor, lassitude, and progressively losing flesh and strength. His urine (and the urine generally) furnishes a good criterion of unhealthy aetion in the system; is alkaline, throwing down a white stareh-like sediment. It is defieient in uric acid, while the greater portion of the urea is resolved into carbonate of ammonia. No other substanee except the benzoic acid seemed capable of eontrolling the septic influence whieh led to these changes. Other vegetable acids were not tried, as they uniformly disorder the stomach, and mineral acids failed. The latter, indeed, aecording to Sir B. Brodie's experienee, are much less influential in eases like the present, where

the phosphate is deposited by the urine in the form of an impalpable powder, with little or no increase of the mucous secretion than in those in which the urine contains the triple phosphate.

Benzoic acid, therefore, enables us to solve the hitherto embarrassing problem of rendering an alkaline urine acid at pleasure, and consequently of obviating the irritation which such urine occasions in the membranous surface with which it comes in contact; a species of irritation which opium is not unfrequently employed to allay.

The transition to the ammoniaco-magnesian phosphate is noted upon the 11th of December, 1842. This may be ascribed to some faulty assimilation in the first passages, as it yielded readily to the exhibition of another acid—namely, the hydrochloric, which did not affect the former deposit. Thus a reflex light, so to speak, is often thrown upon the phenomena of disease, from carefully studying the action of remedies. I may here point attention to the fact, that I have observed a copious formation of crystals of the above triple phosphate in urine after a repast of *sourkrout;* a circumstance, by the way, which may perhaps account for the great immunity of the Germans, who partake freely of that food, from uric acid calculus.

Not only benzoic, but likewise cinnamic acid, is transformed by passing through the system into hippuric acid, as was established by me last spring. To detect the free hippuric acid after the administration of one or other of these acids, it is merely requisite to inspissate a portion of urine by means of a steam-bath, to boil the resulting extract with alcohol *in vacuo*, and allow a little of the clear supernatant liquid to evaporate spontaneously upon a slip of glass. In the course of some hours, characteristic crystals of hippuric acid—namely, quadrangular prisms with dihedral summits may be distinguished with the microscope. This agrees with the recent researches of Pelouze, who has shown that urea may be present along with lactic or hippuric acid, without entering into chemical combination with either of them; thus demonstrating the fallacy of all the theories based upon the supposition of the existence of lactate or hippurate of urea.

In order to ascertain the solvent power of urine containing hippuric acid upon phosphate of lime, the following experiments were instituted:—A quantity of subphosphate of lime was separated from fresh filtered urine by means of pure caustic ammonia in a glass vessel excluded from access of air. The precipitate was well washed with distilled water and dried. A subphosphate was in this way procured, identical with that which forms the various deposits and concretions in the human body. A certain measure of the said urine, having a specific gravity of 1.025, was allowed to digest at a blood-heat along with a given weight of the above subphosphate. After three quarters of an hour had elapsed it was saturated with caustic ammonia, and thereby yielded more than double the amount of subphosphate of lime, which natural urine of the same specific gravity contains, according to the observations of Cruickshank.

Both the prepared subphosphate and the carbonate of lime are promptly taken up by a warm aqueous solution of hippuric acid;

which may thus, independently of its antiseptic agency, serve to hold dissolved any excess of these inorganic matters. Human urinary calculi occasionally consist of one or both of them. Frommherz (Jahrb. der Chemie u. Phys. XVI., 329) has given the details of the analysis of a stone from the human bladder, composed of 90·673 per cent. of carbonate of lime, 2·966 of phosphate of lime, 4·015 of albumen and colouring matter; the nucleus being a particle of quartz. Bergemann (Poggend. Annalen XIX., 558) examined a human urinary calculus, of which the main constituent was carbonate of lime. Winkler (Geiger's Mag. XXI., 253), on the other hand, met with a calculus containing no less than 87·627 of phosphate of lime. A prostatic concretion examined by M. Barruel (Journ. de Chimie Med. VI., 12,) was composed of 80 per cent. of phosphate and carbonate of lime, and 20 per cent. of a substance perfectly resembling coagulated albumen. Indeed I am disposed to believe with Dr. Yelloly, that phosphate of lime is seldom found in animal concretions uncombined with carbonate of lime (Phil. Trans., 1829, p. 79).

Phosphatic depositions are frequently observed in conjunction with gouty affections. Hippocrates says, that a thick urine which forms a whitish sediment, παχυ δε ουρον λευκην υποστασιν εχον, oft betrays pains in the joints (Prædict. lib. II., Cap. 10, n. 7). A remarkable case is collated by Haller (Disp. Pract. tom. VIII., p. 795), "De materiâ calcareâ post diuturnam arthritidem per vesicam urinariam ejectâ." "I know a gouty subject," says Naumann (Handbuch der Med. Klin. tom. VI., 398), "who suffers from chronic catarrh of the bladder. From time to time the urine becomes milky, and throws down a quantity of muco-albuminous matter mixed with phosphate of lime." M. Civiale, a deservedly high authority in questions of this kind, remarks (Du Traitement Médical et Preservatif de la Pierre, p. 65), "chez les personnes atteintes depuis longtemps de la goutte et déja epuisées par les souffrances, la gravelle qui survient ou qui continue est plus spécialement phosphatique." "I know one person (Otto by South, p. 103) in whom, during an atonic attack of gout, the whole mouth, throat, and gullet were largely covered with a whitish mucus, which, when dried on blotting paper, left behind a large quantity of phosphate of lime." Tiedemann found white, stone-like, roundish concretions, principally consisting of phosphate of lime, in most of the muscles, especially in those of the extremities of a gouty subject (Op. cit. p. 252). It is, moreover, well ascertained that the calcareous incrustations which are met with between the serous and fibrous coats of arteries are frequent in the gouty, and in many instances tophaceous concretions contain no urate of soda but phosphate of lime (John, in Meckel's Archiv. für die Physiologie, vol. I., part 4, p. 513.)

Hence it appears probable, that in many such cases the calcareous deposition is to be referred to a debilitating and septic influence acting upon the system at large. To counteract which it behoves the medical practitioner to advise such hygienic and therapeutic means as will maintain that equilibrium of function which consti-

tutes health. A strong argument in favour of the antiseptic power of benzoic acid, or rather of hippuric acid, is deduced from the fact that the urinary secretion, a secretion above all others prone to rapid spontaneous putrefaction, remains untainted for days, and sometimes even weeks, when this acid is one of its component parts.

Provincial Med. and Surg. Journal, Feb. 11, 1843, *p.* 690.

10.—REMARKS ON SOME FORMS OF ABDOMINAL NEURALGIA DEPENDING ON UTERINE IRRITATION,

By Golding Bird, A.M., M.D., F.L.S., &c.

[It seems to be more and more the opinion of the profession that we are only half acquainted with those "protean host of maladies or rather symptoms simulating every form of inflammatory affection occurring in women, from the period of the first development of the uterine functions to the time of their cessation." How many women have been bled and blistered for pleurisies and other supposed inflammatory affections, or confined for months on couches, and gone through the ordeal of blisters, leeches, and moxa, when the uterus was the real organ affected, and clearly produced those distant neuralgic symptoms. When we know how the unimpregnated womb, when in a state of irritation, exercises its influence on distant organs, we need not be surprised that this is much more the case when that organ has been lately undergoing immense changes from impregnation; and also when delivery has been accomplished, and it is gradually re-assuming its former size and functions. "Accordingly, at a time varying from a few hours to a few weeks after parturition or miscarriage, we occasionally find excessive irritation of the uterus, attended with intense neuralgic pain over the abdomen, and a suppression of the lochial discharge manifested, producing a disordered state of every function of the body, giving origin to a set of symptoms often mistaken for puerperal fever and peritonitis."

Dr. Bird relates a good case of this kind. Susan Haws, aged 29, was admitted under his care at the Finsbury Dispensary. She had always been ailing since menstruation commenced, and worse since marriage; she had pains in the hip and loins as well as over the pubes, darting to the back and extending to the left breast and between the shoulders, with excessive low spirits and fits of an hysteric character.]

"All these symptoms are always much more intense when the catamenia appear. For the last two years she has been troubled with excessive leucorrhœal discharge. Two days before she became my patient, she was seized with a fit of an epileptic character, she being then at the termination of a third pregnancy. For this she was bled copiously, and a few hours afterwards was delivered of a

healthy child. During the last few months of utero-gestation, she had been subject to diarrhœa, and the genital organs had been so irritable, that sexual intercourse was attended with excessive pain, and was always followed by an increase of the leucorrhœal discharge, and of the pains above described. After her labour, the lochiæ became copious, her milk abundant, and she appeared well until forty-eight hours had elapsed, when she came under my care for an attack, as it was stated, of peritonitis. I found her lying in bed on her back, with her legs drawn up; her abdomen tumid, and so exquisitely tender that the slightest touch produced the most intense pain; her features were contracted, and presented an aspect of the utmost anxiety; her eyes were suffused; her tongue white, but moist; her pulse 100, small, but jerking; the urine was very scanty, and nearly brown from its extreme concentration. The woman did not lie still and quiet, but kept tossing about from side to side uttering loud and incoherent screams; she threw her arms wildly over her head, and seemed scarcely conscious of any thing around her, until an attempt was made to touch, *or even approach* the abdomen, when she shrunk back and cried out in an incoherent manner. I found that she had not slept the whole night from excessive rigors, which had continued nearly without intermission for eight hours, and that these were followed by heat and sweating, and had terminated in the attack I witnessed. The abdominal pain appeared to be most intense about the pubic region and over the cœcum, and to become more severe every five or ten minutes, never however entirely ceasing.

The practitioner who had been called to this patient early in the morning before I saw her, had covered the abdomen with leeches, as her friends resolutely refused allowing her to be bled from the arm, and had given a large dose of calomel; the pain had, however, become much more severe, and the paroxysms more frequent since its administration. The lochiæ had ceased in the course of the night, and the bowels had been once opened during the previous twenty-four hours.

℞. Hydrarg. c. Cretâ, gr. iv. statim.—Olei Ricini, ʒ vj. post horam.—Opii puri, gr. j.

Antim. Tart. gr. $\frac{1}{4}$, Misce. Ft. pilul, nocte maneque cap. And a large bran-bag fomentation was ordered to be applied to the abdomen as hot as it could be borne, and continued during the day. She was ordered to take mutton-broth and gruel *ad libitum*.

Feb. 19. A scanty show of the lochiæ has appeared in the night; bowels freely open; dejections dark, fœtid, and containing scybalæ; she has had some sleep in the night; tongue white but moist; pulse 100, small and compressible; abdomen exquisitely tender on pressure, but the paroxysms of pain are less frequent, although still severe; she still utters loud cries on the slightest pressure being applied to the abdomen; she has passed no water, and not above an ounce of turbid, dark urine was removed by the catheter; the surface is still hot, but much moister; the bran-bags have been kept constantly applied. Rep. Ol. Ricini. pilulæ, et fotus.

20th. Has passed an excellent night; bowels freely open, with much dark, fœtid, and somewhat seybalous matter; no fresh rigors; lochiæ copious; abdominal tenderness less; the paroxysms of pain have nearly ceased; urine abundant. Rep. pilulæ et fotus.

She continued mending until the 25th, when she was reported convalescent; still, however, having an irritable condition of the uterus left, as shown by pains about the loins, hips, and pubes. On March 14th, she again became my patient for what was stated to be pleurisy, ushered in by intense rigors, followed by heat and sweating. I found her lying in bed on the left side, breathing with extreme difficulty, every respiration being accompanied by a cry of pain; she referred her suffering to a space under the left breast extending to the margins of the ribs. On attempting to turn her in bed, she declared the pain and difficulty of breathing to be insufferable. On examining her chest I could not detect any lesion. Her pulse was 100, small, and rather jerking; pressure over the uterus produced intense pain; her bowels had been constipated for two days, and the leucorrhœal discharge was profuse.

℞. Ol. Ricini, f. ℥j c. T. Opii ♏xx. statim.—Opii, gr. j. Antim. Tart. gr. ¼, ter die.

15th. Numerous seybalous masses were brought away by the oil; she had passed a good night, and had perspired copiously; the pain had nearly ceased. Some wine and porter were allowed her, and she became in a few days once more convalescent. On the 30th March, she walked to my house, apparently well, complaining, however, of a dull pain shooting down the left leg, causing her to draw the limb after her in walking; the leucorrhœal discharge, and the symptoms of irritable uterus still continue. She attributed the pain of the leg to sexual intercourse, which had produced such excessive pain, that she fainted.

In this case, we have an example of a woman whose nervous system has been from the commencement of menstruation always more or less deranged from an irritable state of the uterus, and its attendant, hysteric epilepsy. The abundant leucorrhœal discharge, even during pregnancy, sufficiently attests the deranged state of the uterine functions. On labour commencing, we find this state reacts on the cerebro-spinal system, and a formidable apoplectic fit, attended with complete unconsciousness, is the result. The labour terminates, she commences suckling her child, and forty-eight hours scarcely elapse ere the peculiar set of symptoms indicative of intense uterine irritation supervene. The suppression of the lochiæ and urine, her position in bed, the pulse, state of the tongue, skin, and abdominal tenderness, all preceded by rigors, would appear to indicate that much dreaded disease, puerperal peritonitis; but the incoherent screams, the wild and unmeaning expression of countenance, the tossing of her arms, and the constant shifting of her position in bed, as well as the crying out, on the mere approach of the hand to the abdomen, and the pain occurring in paroxysms, pointed out, on the other hand, the existence of excessive irritation, and unmasked

the true character of the disease. The result of the treatment fully justified the diagnosis. But scarcely had a fortnight elapsed from the time of her convalescence, when, after two days' constipation, rigors again came on, the uterine discharge then ceases, and all the general symptoms of an intense pleurisy appear. Again, a comparison of the symptoms presented by the patient, and an examination of the chest by auscultation, develope the nature of the ailment, and the woman is again relieved. She walks about, performs her ordinary domestic duties, still having severe lumbar and pelvic pains, when a pseudo-paralysis of the left leg, following a direct irritation being applied to the uterus, makes its appearance, all pointing out the internal irritable condition of that organ, and justifying our regarding it as the predisposing cause of the various attacks suffered by this patient after parturition.

I am quite aware that cases of this kind would be by many regarded as essentially arising from intestinal irritation, and would consequently be classed with those interesting cases of head affection described by Dr. M. Hall, as produced by that cause, and so frequently occurring in the puerperal stools. By others, again, these maladies would be, and have been, traced to a strictly constitutional origin. But with regard to the first view, viz. that puerperal neuralgia arises from intestinal irritation, I would remark, that we have equal evidence of derangement of every function in the body; the secretions of the skin and kidney are in most instances deficient, those of the liver and mucous surfaces are always more or less vitiated, and the bowels, although often constipated, are occasionally acting too energetically, or, in some cases, are tolerably regular; but the uterine functions are, so far as I have seen, invariably affected, the secretion being either entirely arrested, or becoming very fœtid and viscid, and as one or other of these states always occurs, it is fair to regard them as the essential predisposing causes to the production of the neuralgic state under consideration. Can it be supposed, I would ask, that two days' constipation would alone be adequate to the production of so severe a set of symptoms, as we find manifested in the first case detailed in this paper, providing some other important source of irritation had not been exerting its influence upon the patient. Is it, indeed, reasonable to suppose, that a slight constipation—a symptom of such frequent occurrence during the puerperal state—could develope so serious a train of symptoms, unless some other function was so manifestly imperfect as to produce a generally irritable condition of the nervous system, and thereby rendering the body obnoxious to attacks of disease from exciting causes, which, in the ordinary state, and when free from such depressing influences, would be almost without action upon it, I regard the depressed state of the nervous system produced by the irritable condition of the womb, as the predisposing cause of these attacks, and any slightly deranged function, whether of the skin, liver, or bowels, will act as an exciting cause upon such a deranged state of the system, and develope in full force the severe neuralgic attacks under consideration.

With regard to the diagnosis of these neuralgic affections, the comparison of the different symptoms presented by the patient will generally be the best guide of the practitioner. Every symptom of genuine peritonitis may be present in these attacks, but not at the same time; again, the accession of the pain in paroxysms, the screaming out, *ere the hand is in contact with the abdomen*, or when it has barely touched the parietes; the fact of our often being able to apply considerable pressure without pain, when the patient's attention is arrested by a sudden exclamation, an abrupt query, or her infant's cries, will generally enable the physician to detect the true nature of the disease. The excessive depression of spirits, and often the strange and groundless delusions of the patient—the accession of an occasional hysteric convulsion, will also assist in forming a correct diagnosis, a task at all times of no small difficulty in these cases.

Lond. and Edin. Monthly Journal of Med. Science, Jan. 1843, *p.* 31.

II.—EFFECTS OF IODIDE OF POTASSIUM ON THE SYSTEM.

By M. Ricord, Paris.

The following observations on this subject are extracted from a memoir on the pathognomonic action of the iodide, recently published in Paris, by M. Ricord:—

Of all the tissues of the human body, the skin is decidedly that which is most susceptible of the action of this medicament. Eczema, herpes, erythema, impetigo, rupia, an affection simulating acne, &c., are common in patients submitted to its influence; and, in short, there is scarcely any kind of cutaneous disease which, in different idiosyncrasies, may not be excited by iodide of potassium, though these effects may be mostly made to disappear by the discontinuance of the remedy.

Less decided, but still very strongly marked, is the influence of the iodide on the digestive organs. In most cases the functions of the stomach, &c., are roused into great activity: patients gain appetite and fat. Occasionally, indeed, this effect passes a salutary limit, and the appetite becomes ravenous, or acute pains are felt at the cardiac extremity of the stomach. These pains, however, seem to be wholly gastralgic; they are not attended with thirst, furred tongue, fever, &c., or increased on pressure, or during the period of digestion; and in only a few individuals does a veritable inflammation of the stomach or intestines occur, causing vomiting, diarrhœa, &c.

Salivation is a common effect, and sometimes the quantity of saliva secreted is equal to that in the highest degree of mercurial salivation, but it appears to be of a different character. M. Ricord says "it resembles greatly the ptyalism of pregnant women. The saliva is not viscous, and it seems not only to emanate from the

mouth, but to be regurgitated. The mucous membrane of the mouth may be a little œdematous and irritable, but no inflammation or ulceration is perceptible, as in mercurial salivation, nor is the breath tainted, neither are the salivary glands the seat of any swelling."

Iodide of potassium augments considerably the action of the kidneys. One patient of M. Ricord, at the Hôpital des Veneriens, at Paris, while under its influence, passed daily from forty to fifty litres (the litre equal to 5-6ths of the imperial quart) of urine, drinking, however, in an equivalent ratio. This enormous secretion always ceased whenever the employment of the iodide was suspended. In its character the fluid differed little from ordinary urine, except in containing evident traces of the salt.

The circulation appears less influenced by iodide of potassium than most of the other functions; the pulse is commonly neither accelerated by it nor retarded. The instances in which the former condition has been remarked have been, for the most part, those in which a slight gastro-intestinal inflammation has been incurred. The iodide appears to exert an influence, however, on the physical constitution of the blood. This, under its influence, becomes less plastic; and nasal, pulmonary, intestinal, &c., hæmorrhages are more liable to occur and persist in persons of a scorbutic, scrofulous, or chlorotic habit of body.

Some symptoms, calculated to alarm practitioners not accustomed to employ this remedy, or frequently to witness its effects, are vascular injection and tumefaction of the conjunctiva, with œdema and infiltration of the submucous cellular tissue adjacent. There is little, if any, tendency to suppuration in this inflammation, and it is a symptom which most usually appears only at the commencement of a course of the iodide, and rarely recurs. But it is important to avoid mistaking it for a venereal or gonorrhœal ophthalmia, to which it appears to bear some analogy.

A somewhat similar affection sometimes extends under its use to the nasal mucous membrane, producing coryza, though unattended with sneezing, and without any disposition to pass into a suppurative stage. "The catarrhal mucus, provoked by iodide of potassium, *does not ripen* into matter of a viscous quality; and, indeed, if previously to the administration of the remedy there had existed a purulent secretion in the nasal fossæ, this secretion, unless it had its origin in a carious state of the bones, would, under the influence of the iodide, probably diminish and disappear. In some few individuals the effects above stated obtain in the bronchi, instead of the pituitary membrane or conjunctiva. But here, also, symptoms of any grave affection are absent; there is little cough or symptomatic fever; and, though a good deal of expectoration may take place, it is never of a suppurative kind."

The impressions of the iodide on the cerebro-spinal nervous system are sometimes perceptible in cerebral excitement proceeding from congestion, with symptoms like those of ordinary intoxication. At other times the motor nerves are slightly affected, giving rise to

subsultus tendinum in a slight degree; and it is said that amaurosis has on rare occasions supervened.

The genito-urinary organs are among those which are most susceptible of the influence of the iodide of potassium. M. Ricord says, "I have been able to trace the fresh access of blennorrhœas ineffectually got rid of previously, or the exasperation of those actually existing, so frequently to the use of this medicament, that the existence or recent presence of a blennorrhœa I regard as its temporary contra-indication. But, perhaps (on the principle '*similia similibus*,' probably) advantage may be derived from the iodide of potassium in some cases of blennorrhœa."

Most of the inconveniences named above, as attending the employment of the remedy, do so in only a small proportion of cases; and few, even though having reached their acme, last a week after the suspension of the remedy, or a diminution of its dose. In a majority of cases, "not to lose time by inefficient treatment," M. Ricord advises the employment from the first of pretty large doses, that is to say, of six or seven grains, three times a-day, which doses may be doubled in the course of a week, if required. In his experience it has seldom been necessary to administer the remedy to a greater extent than about two scruples daily, or to a less extent than one scruple in the same period.

M. Ricord remarks that in cases in which both iodide of potassium and mercury are indicated, he prefers giving them on alternate days, or at other separate times, say at intervals of two hours apart, in preference to administering them in conjunction. His reason seems to be that the stomach tolerates each much better separately.—*L'Experience.*

Lancet, Jan. 28, 1843, *p.* 652.

The iodide of potassium possesses the remarkable property of causing determination of diseased action to the skin. In cases of what may be termed "suppressed measles" and "scarlatina" it will frequently induce a healthful reaction under the most desperate circumstances. One or two grains, according to the age of the patient, under twelve years, may be dissolved in a quantity of sugared water, and administered, repeatedly, as an ordinary drink, the whole quantity being given in twenty-four hours, for three or four days. In measles, a small plaster to the chest assists the peculiar action of the iodine. In scarlatina, the compound tincture of iodine, diluted with three or four parts of water, may be frequently applied, by means of a camel-hair brush, to the front and sides of the throat and neck. Milk is injurious during the first two or three days, in cases either of measles or scarlatina. I have not had an opportunity of giving iodine to individuals suffering from small-pox, but think it might prove serviceable, especially after the appearance of the eruption, as anticipatory of secondary fever.

Ibid, Jan. 21, 1843, *p.* 632.

12.—TETANUS SUCCESSFULLY TREATED.

By Dr. P. J. Bauduy, Cuba.

[In this case a small splinter three-quarters of an inch long, and as thick as a pin was, by an accident, driven under the integuments of the left thigh, between the sartorius and triceps adductor muscles. In eight days the patient began to feel uneasy about his jaws, and the rigidity of tetanus rapidly followed; and about eighteen days after the injury the disease was fast advancing to a fatal termination, on which day, says Dr. Bauduy,]

I found all the bad symptoms increased; can no longer pass his urine; can scarcely open the jaws at all; spasms stronger and more frequent; has had no stool; considerable anxiety of countenance; can swallow, but with the greatest difficulty and suffers excruciating pain. I immediately dilated the wound freely (the splinter had been extracted only a few days before by his physician), and applied to it *the actual cautery*, and ordered hot emollient cataplasms to be kept over it. An injection of oil of sweet almonds, Castile soap, and molasses, in which a clove or two of garlic should be bruised, to be given immediately, and repeated every four hours until the morning; frictions of hot oil, with bruised garlic, over abdomen and throat, and cataplasms of tobacco over pubal region, in order to overcome the spasm of sphincter of bladder. Ordered him for next morning a pill of ten grains of the sub-nitrate of mercury—a medicine of much power much used in this country, to which I believe its use is almost entirely confined; it is powerfully emetic, cathartic, and diaphoretic; its effects in traumatic tetanus are often wonderful, and, altogether, it is a medicine possessed of such important powers as to merit much attention. It is an empirical remedy, but one that deserves to be tried by the profession. I propose, on some other occasion, to furnish the readers of your Journal with an account of its powers, and the diseases in which I have found it useful. Ordered, likewise, frictions of hot oil, in which should be dissolved nitrate of mercury, one grain to the ounce, to the abdomen, thighs, knees, neck, jaws, and inside of shoulders, to be repeated every three or four hours. Lukewarm water, with a few drops of spirit of nitrous æther, for drink.

25. Saw him about one, p.m. The nitrate of mercury produced copious vomiting and four or five large fæcal evacuations; has passed his urine without much difficulty, and in large quantities; is perspiring pretty freely; belly much softer; says he feels much better; has had no shooting pain from sternum to spine; looks much more cheerful; pulse natural; slight thirst. Ordered a small blister to be put on the wound; ordered two or three purgative injections to be given in the course of the afternoon. Eight, p.m. Saw him again. Injections produced two copious stools. Gave him half a grain of sulphate of morphia; ordered frictions of nitrate of mercury to be continued, and ten more grains of the same to be taken early next morning

26. Eight a.m. Slept well last night, but suffered from slight difficulty in urinating. Took the nitrate of mercury at five, a.m. Has vomited but once, and has not been purged; belly a little harder; has had slight returns of the shooting pain from sternum to spine; is bathed in perspiration; is more dejected—says he will die. Ordered a purgative enema every hour till he evacuates freely, and frictions of nitrate of mercury to be continued.

Six, p. m. Profuse perspiration still continues; complains of tongue; lips and whole mouth paining him; pulse 65, soft, rather irregular; belly much softer; has urinated freely, and had several large evacuations; opens his jaws nearly as well as in health; tongue coated with white fur, edges and tip red. Ordered another purgative injection; frictions still to be continued; tobacco cataplasms to abdomen; sulphate of morphia half a grain, every hour

27. Five, p.m. Passed a good night. Had several stools, and complains of tenesmus, and passes blood in the evacuations; urinates very freely, but has still very slight pain; belly quite as soft as natural; has had but very few and very slight shooting pains from sternum to spine; opens jaws freely; swallows easily; cheerful; much thirst; pulse 84, soft, regular; tongue coated with thick white fur; complains much of mouth and throat; craves for food; blister on wound has had no effect but that of causing abundant suppuration. Sulphate of morphia half a grain, to be continued every hour; frictions to be still continued, and tobacco cataplasms. As I think that there is now slight opisthotonos, I ordered strong tartar emetic ointment to be rubbed in between shoulders. Injections of starch, with half a grain of sulphate of morphia every sixth hour, if evacuations continued. Basilicon to the wound. Weather since yesterday morning very unfavourable—cold north-easterly wind, with continual showers of rain.

29. Could not see him yesterday on account of continued heavy rain. To-day, at ten, a.m., found him better; no shooting pains; jaws open quite freely; no opisthotonos, but belly is harder, and there is considerable difficulty in urinating; bloody stools were stopt by the injections on the night of the 27th; profuse salivation; mouth, gums, and lips very much swelled, full of small ulcers; tongue covered with thick fur, edges very red, and small ulcers on them; slept very well last night; not much thirst or appetite; pulse 72, soft, regular. Ordered frictions of nitrate of mercury to be stopt; one ounce of castor oil to be given, and hot tisan of elder blossoms and borage leaves, with sweet spirits of nitre, a drink. Frictions of hot olive oil, spirits of ammonia, and tincture of opium over jaws and throat. Frictions of tartar emetic to be discontinued, as pimples are very numerous and sore. Gargles of lead water and infusion of rose leaves. Sulphate of morphia, half a grain every six hours.

31. Ptyalism still continues, but less; mouth less swelled, less painful; tongue coated with thick white fur, resembling coat of white lead paint, blackened in many places by gargle; jaws open naturally; belly still hard, much difficulty in passing the urine; bowels regular; no thirst or appetite; chest very prominent, and

some rigidity of muscles of back; no shooting pains; no opisthotonos; pulse 72, regular. Ordered a few drops tincture of valerian to be added to his tisan; sulphate of morphia, quarter of a grain; camphor three grains, every three hours. Emollient fomentations over pubal region; frictions of oil, and spirits of ammonia, &c., to be continued to fauces; wound suppurates freely; gargle continued, &c.

November 2, Five, p.m. Is better; pulse 72, regular; quite cheerful; opens jaws very well; less prominence of chest; less rigidity of muscles of back; ptyalism nearly ceased; mouth much better; gums less swelled and less spongy; tongue still covered with same white thick fur, cleansing on edges and tip; bowels very costive, and great difficulty in passing his urine—amounts to almost total retention; valerian was not given; occasionally he has slight shooting pain from sternum to spine, when belly becomes very hard, limbs flexed and rigid; belly otherwise less hard; quite cheerful; sleeps well; appetite improved; and slight thirst. Ordered purgative injections to be repeated until he evacuates freely; root of valerian to be added to tisan; introduced catheter, found considerable resistance at neck of bladder, but by holding it there some time, and pressing it steadily, but very gently, forward, and at the same time diverting patient's attention, I finally overcame the spasm; drew off but a small quantity. Ordered for next morning compound senna tea; a little more nutritious aliment allowed; tisan and other medicines continued as before, except morphia, which is to be suspended.

5. Much better; no pain whatever; purge had operated very freely, his bowels still continue loose; ptyalism has increased; tongue clear, except at back part, where there is still a thick fur; gums very red, tender but hard; pulse 72, natural; belly soft; appetite very good; sleeps well; walked about the room to-day; no longer any difficulty in passing the urine; jaws open freely. Ordered gargle of tincture of myrrh, tincture of guaiacum, and infusion of cinchona.

8. Much better; convalescent. Ordered all medicine except gargle to be stopt.

12. Met him riding out; is quiet well; wound closed.—*Medical Examiner.*

Provincial Med. and Surg. Journal, Dec. 31, 1842, *p.* 269.

13.—ON PREPARING A CONCENTRATED CAMPHOR MIXTURE.

By John Fordred, Esq., Ashford, Kent.

The principal points to be attained in preparing a "mistura camphoræ concentrata" are three:—

1st. It must be perfectly colourless.

2d. It must contain as little spirit as possible.

3d. When mixed with the due quantity of water, it must approximate as closely as possible to the camphor mixture of the London Pharmacopœia.

The first formula, I believe, ever published appeared in Bateman's Magnacopia, edit. 1836. This has been frequently copied. The form Mr. Ladbury favoured you with is the same, save that he has reduced the proportion of the spirit of camphor from 12 ounces to 3,—for what purpose I know not. I need scarcely say that a mixture prepared from this receipt partakes more of the character of *myrrh* than *camphor*.

After repeated trials of various formulæ, to all of which there appeared some objection, I have found the following to be the best adapted for practical purposes.

MISTURÆ CAMPHORÆ CONCENTRATA.

℞. Tincturæ Camphoræ, P.L., f℥j. ℥v.; *Tincturæ Myrrhæ Pallidæ, ♏xxx.; Spiritus Vini Rectificati ad f℥iv. M, f℥iv. ad f℥xvj. Aquæ Puræ = Mist. Camph.

Note.—If absolute alcohol is employed, a less quantity will be required.

* TINCTURA MYRRHÆ PALLIDÆ.

℞. Tincturæ Myrrhæ P.L., ℥iij.; P. Carbonis Animalis, ℥j.

Digest for fourteen days, frequently shaking; then filter.

The best method of mixing this is to measure the requisite quantity of water *first*, and then add the solution of camphor to it.

Those who object to the addition of the myrrh, though in so small a quantity, may omit it; but a solution so prepared does not mix so readily with water—it is some time before the whole of the camphor is taken up.

Undoubtedly, there is something mysterious in the action of myrrh on camphor, which, I believe, has not yet been satisfactorily explained. We know for a certainty that the large quantity of spirit present in all concentrated camphor mixtures is the immediate cause of the ready solution of the camphor in the water, but still the myrrh in some way or other materially assists the *rapidity* of the action.

A camphor mixture made with the foregoing essence contains ·76 of a grain of camphor in the fluid ounce, equivalent to rather more tha ¾ of a grain. This, although somewhat deficient, is, I think, as near an approximation as can be obtained without unduly increasing the quantity of the spirit.

Far be it from me to advise the substitution of this for the authorised camphor mixture, yet there are times and seasons in which even a *conscientious* chemist and druggist would not scruple to employ the "concentrated infusions", and it is in like emergencies that he would make use of a "concentrated camphor mixture."

Pharmaceutical Journal, Jan. 1843, *p.* 468.

14.—CASE SHEWING THE EFFICACY OF STRYCHNINE IN PARALYSIS OF THE FACE.

By Dr. Joslin, New York.

A young man, W. H. L., had been for the last four days unable to shut his mouth, except by means of his fingers, or by the impulse of the air against them during a forced respiration. This was the defect which appeared to give him most concern, as it affected his speech. Of course, he could articulate no words containing labial letters. From this circumstance, and the expression—or rather total want of expression—of his face, I immediately perceived that there was a paralysis of all the muscles of the face which were supplied by the portio dura. Those supplied exclusively by other nerves were wholly unaffected. He had perfect control of the tongue and of the masseter, temporal and other muscles specially appropriated to mastication. Still one difficulty existed in this operation, viz. an inability to keep the food properly between the teeth. This was to be anticipated, inasmuch as the buccinator, employed in this office, is also connected with the function of respiration. The patient was wholly incapable of smiling or frowning, or closing the eyelids, from paralysis of the zygomatici, corrugator supercilii, orbicularis palpebrarum, &c. When I requested him to close his eyes, the lower lid did not rise at all, but the eyeball rolled extensively upward under the upper lid, which descended a little, when I requested him to direct the eyes steadily toward me. Whilst attempting to shut them, he found it impossible to cover the cornea.

As the paralysis affected both sides of the face, but did not extend beyond it, I inferred that the disease had originated neither at the origin nor in the course of the nerve, but at its organic extremities, and probably in consequence of an application of lead to the mouth. The patient's answer to an inquiry on this point, tended to confirm this suspicion. I learned that he was a printer, and had been holding types in his mouth, when at work as a compositor. He had formerly done so, but on learning that printer's types were poisonous, had, until within a short time previous, nearly discontinued the practice. He was at this time perhaps more predisposed to the affection in consequence of some exposure to cold a few days before, and of previous general debility for some months, induced partly by an exhausting hæmorrhage from the leg.

Treatment.—A cathartic was directed, and the application of tincture of strychnine to the cuticle of the face—about one drachm of a solution containing about three grains of strychnine, to an ounce of alcohol, was applied to each side three times a day, and the absorption assisted by friction. This lotion sometimes produced a little twitching of the muscles, fifteen or twenty minutes after its application; and under its use the muscles of the face completely recovered their power in two or two and a half months. At the end of one month, the application to the left cheek was discon-

tinued, as the muscles on that side had completely recovered. On the opposite side, the corrugator supercilii and muscles of the mouth were more benefited by the first month's treatment, than the orbicularis palpebrarum. For complete recovery, this side required at least twice as much time as the opposite side of the face.

[The use of strychnine in cases of paralysis, is perhaps too little resorted to. This arises from the dangerous effects which occasionally ensue. It is one of those few medicines whose therapeutic powers have not been discovered by mere chance. Fouquier was led to suspect its utility in paralysis from its stimulating effects on the muscular system: and we should think that its value is too frequently depreciated, from its indiscriminate use, as there are many cases of paralysis which are well known to arise from such lesions of the nervous system as would be materially aggravated by any stimulant. For example, when the paralysis is owing to some effusion of blood into the substance, or upon the surface of the nervous centre, which is a too frequent occurrence, it is evident the strychnine would be highly injurious; also when it arises from softening of the brain, whether that change takes place, according to Lallemand, before hæmorrhage, or after it. Sometimes, however, when the paralysis has continued a long time, and when the effusion on the brain, or within its substance, may be supposed to have been removed, the muscles continue unable to regain their power, and then strychnine will be found serviceable. But it is chiefly when the nervous centre is supposed to be uninjured, and the paralysis functional, that strychnine will be found most efficacious: although we are inclined to think with Andral, that there are few cases of what may be called functional paralysis without some organic lesion, though we cannot detect it. Dr. Joslin ends his paper by making some interesting remarks on the effects of strychnine in another case. He says:]

It is possible that some light may be thrown on the subject of the apparent special determination of the action of strychnine to affected muscles, by some facts noticed in this case. When the spasmodic action came on, whilst the patient was sitting in his chair, with his arm but slightly flexed, and his leg much more flexed, he noticed that at the instant of the spasmodic action, the forearm always became flexed and the leg extended, the latter more powerfully. Why this special influence on the extensors of one limb and the flexors of the other? It will be perceived that the action, both in direction and intensity, had some relation to the previous position; and it was subsequently ascertained, that whether the action in either limb was flexion or extension, depended on its previous position. If much flexed, it became extended, if extended, flexed. Should the same results be observed in other patients, it might, perhaps, enable us to advance one more step in the explanation or generalization of the special influence on paralyzed muscles. The spasmodic contractions are more readily excited in muscles relaxed by paralysis than in those which are in the normal condition. If

this special determination of action is due chiefly to previous relaxation, we might expect it to be oftener manifested in the more relaxed than in the more tense condition of the muscles, whether this relaxation had originated in paralysis, position, or volition.

It may be proper to state some experiments made on this patient which were suggested by accident, and which have a bearing on some interesting points of the theory of muscular action, if not upon those points of it involved in the above discussion.

The experiments were suggested during the application of powdered strychnine to a portion of the instep, from which the cuticle had been removed. But I will first take this occasion to state, that as a therapeutic experiment, it was unsuccessful. Though the application was made rather freely to the dermis of the anterior part of the ankle and of the top of the foot denuded by successive epispastics, there was no appreciable effect; and I was induced to suspect the endermic method to be inferior both to the internal use and to the cuticular application which some have denominated the intraleptic method.

On a certain day, as I was pouring from a paper the powdered strychnine upon the anterior and upper part of the foot, the paper came accidentally in contact with the sensitive surface of the blistered part, whose sensibility like that of every other part had been unaffected by the disease. The muscles of the limb, over which neither the action of the powder nor the volition of the patient had been for some time able to exercise the slightest control, were instantly called into forcible action by the first contact of the edge of the paper. The foot was thrown upwards, chiefly by the extensors of the leg. The paper was kicked and its contents scattered.

The potency of mechanical irritation is of much less interest than the direction of the motion. On this subject I made repeated experiments on two opposite portions of the surface of the foot, which always resulted in producing a motion towards the irritated part, a motion chiefly due to the extensors and flexors of the leg situated on the thigh, and of course at a great distance from the part directly irritated. Although the patient was incapable of moving the foot by a voluntary effort, it was invariably and involuntarily thrown upward by mechanical irritation applied to the vesicated surface on the upper side, and as invariably drawn downwards and backwards by titillation of the sole or plantar region. Thus, irritation of the surface opposite one of the extensors of the toes, the extensor brevis digitorum pedis, called into action the extensors of the leg, whilst irritation of the surface opposite one of the flexors of the toes, the flexor brevis digitorum pedis, called into action the flexors of the leg.

American Journal of the Medical Sciences, Oct. 1842, *p.* 322.

15.—SULPHURIC ACID A PREVENTIVE OF LEAD COLIC.

By E. W. Benson, Esq., Birmingham.

[In most white-lead works the prevalence of colic amongst the workmen is very distressing, notwithstanding all the precautions which can be adopted, such as the use of gloves, strict attention to cleanliness, change of dress on leaving work, carrying off the dust which arises in some of the operations, &c. Mr. Benson says:]

I met with a statement some time since, that "sulphuric lemonade" had been successfully used at a white-lead manufactory in France as a preventive of the injurious effects of white lead, and it occurred to me that by adding *sulphuric acid* to the treacle-beer then used by our people, its supposed efficacy might be tested. This idea was carried into effect in the summer of 1841, and the results have proved most gratifying, as, although during several weeks after the addition of the sulphuric acid to the treacle beverage, little advantage seemed to be derived, yet the cases of lead colic became gradually less frequent, and since October of that year, or during a period of fifteen months, not a single case of lead colic has occurred amongst the people.

As no other change has taken place in the circumstances under which these men are placed, nor in the influences to which they are exposed, I can only attribute this gratifying result to the employment of the sulphuric acid, which I conceive produces its effect by converting the highly poisonous carbonate of lead into the innocuous sulphate of lead. I am therefore anxious that the workpeople employed at other manufactories should be protected by the means which have been found so perfectly effective in this establishment.

It will be seen by the annexed formula that bicarbonate of soda is also added to the treacle-beer, and that, consequently, sulphate of soda is produced, but the proportions of soda and sulphuric acid are such that rather less than one half of the sulphuric acid becomes neutralised. The object in adding bicarbonate of soda is to give a pleasant briskness to the beverage.

FORMULA FOR PREPARING THE SULPHURIC BEER.

Take of treacle, 15 lbs.; bruised ginger, ½ lb.; water, 12 gallons; yeast, 1 quart; bicarbonate of soda, 1½ ounce; sulphuric acid (oil of vitriol), 1½ ounce, by weight.

Boil the ginger in two gallons of water; add the treacle and the remainder of the water, hot. When nearly cold transfer it to a cask, and add the yeast to cause fermentation. When this has nearly ceased add the sulphuric acid, previously diluted with eight times its quantity of water, and then add the bicarbonate of soda, dissolved in one quart of water. Close up the cask, and in three or four days the beer will be fit for use. As acetous fermentation speedily takes place, particularly in hot weather, new supplies should be prepared as required.

Lancet, Dec. 17, 1842, *p.* 435.

16.—HYDROCEPHALUS TREATED BY IODINE.

By John Christie, M.D., M.R.C.S.L., Keith.

[In Retrospect Vol. IV, Art. 35, and Vol. VI, Art. 7, will be found interesting cases of this disease treated successfully by the above remedy. The subjoined case confirms the value of this mode of treatment. The child was eight years old, and before Dr. Christie's visit, had been ill a week, and had an attack of convulsions the previous evening.]

He was screaming and tossing about, making frequent complaints of his head, the pain being referred to the forehead and temples; his face was flushed, head hot, eyes brilliant, intolerant of light, and pupils contracted; his skin was harsh and dry, tongue white, pulse frequent, and sharp, urine scanty and high coloured, his bowels were costive, and his breath offensive.

The symptoms above enumerated, being apparently those of acute hydrocephalus, blood was abstracted from the arm until *deliqium animi* took place, which occurred when about nine ounces had flowed away. A brisk dose of calomel and jalap was given, and an evaporating lotion applied to the head. I saw him again in six hours; reaction had taken place, and the bowels were still unopened. Four leeches were directed to be applied over the temples, a purgative enema to be administered, and the use of the evaporating lotion to be resumed as soon as the bleeding from the leech bites ceased. A dose, consisting of one grain of calomel, and three of James' powder, was directed to be given every third hour.

11th. I found the patient apparently somewhat better; he had slept very quietly for two hours in the earlier part of the night. The bowels were twice opened during the night; the stools were black, slimy, and offensive; and the pulse was quick, but not so sharp. I ordered the calomel and James' powder to be continued, as well as the lotion.

12 o'clock p.m. Towards evening, he became gradually worse; the pulse grew slower and weaker, and was very easily accelerated on his being raised from the recumbent position; the pupils, when viewed in a moderate and steady light, oscillated, dilated slowly, and at length became fixed; the tongue was loaded, and white; the breath offensive; the urine scanty; and the bowels had not been moved for twenty-four hours. I ordered the dose of calomel and jalap to be repeated, an enema to be administered, and a blister to be applied over the parietal region on each side. The head being still hot, the evaporating lotion was continued; the calomel and James' powder were desired to be omitted until the bowels should be moved.

13th. The bowels have been once moved; the stools were of the same offensive character as formerly; the blister was removed, and the surface dressed with resinous ointment; the patient was much in the same state as at last report; the calomel and antimonial powders were ordered to be continued.

14th and 15th. The same treatment was continued, but with no symptoms of amendment; and early on the morning of the 13th, he had a strong attack of convulsions. He lay with the eyes half closed, moaning frequently, and now and then uttering a loud scream; the pupils were fixed; the urine was passed involuntarily, and there were frequent automatic movements of the left arm and leg; the pulse was also rapid and weak.

The plan of treatment above detailed, having apparently had no influence in arresting the progress of the disease, I resolved to make a trial of iodine, in the manner mentioned by Maunsell and Evanson,* and, accordingly, prescribed as follows:—

℞. Iodide of Potassium, sixteen grains; Iodine, four grains; Water, one ounce. Dissolve.

A teaspoonful of this solution was ordered every four hours.

The head was directed to be rubbed with a weak ointment of biniodide of mercury.

16th. No visible amendment could be observed; the bowels had not been opened since the 13th, in consequence of which a dose of castor oil was ordered; the other remedies were continued.

17th. During the night he had a copious flow of urine; the bowels were twice moved; the stools were still offensive; the pupils contracted slightly on being exposed to a strong light; he was otherwise not much improved.

18th, 19th, 20th. During these days considerable improvement took place; the pupils became more sensible to light; there was less restlessness; the automatic movements ceased; the pulse became slower; and in short, all the more formidable symptoms nearly disappeared. The ointment, having caused considerable irritation of the scalp, was discontinued.

21st, 22d, 23d. The iodine was continued until the evening of the 22d.

From this date he went on improving almost hourly, and no untoward symptom supervened to check his restoration to health. His left arm and leg were, for two months, nearly powerless, but they gradually recovered; and he now looks quite healthy, his strength and intellect being in no way impaired. I ought to mention, that from the 13th, he was allowed beef-tea, arrow-root, and small quantities of wine.

Lon. and Edin. Monthly Journal of Med. Science, Mar. 1843, *p.* 192.

17.—CASE OF TAPPING OF THE BRAIN IN HYDROCEPHALUS.

By Richard G. H. Butcher, Esq.

Maria Burns applied for advice at the South Infirmary, Cork. She stated having had three children, "two of whom died of water on the brain;" the third, she apprehended, was affected in a similar

* Maunsell and Evanson on Diseases of Children, p. 377.

manner, and entreated that something would be done that might afford any chance of relief. Upon examining the patient, a boy 16 months of age, his head was almost transparent, and presented, in different situations, patches where the ossific matter was not deposited, its place being supplied by the common integuments. The sutures were very considerably separated, being from half to three quarters of an inch asunder. The head measured in the fronti-occipital circumference thirteen inches and a half; from ear to ear, across the vertex, nine inches; round the chin and across the vertex nine inches three quarters; the pupils were greatly dilated, and insensible to the stimulus of light. Now and then the child would scream out in the most violent manner, being then immediately attacked with convulsions, which the mother said came on frequently for four days previous to her application for relief at the hospital. Here nothing could be expected from the ordinary methods of treatment; therefore, Dr. Woodroffe determined on drawing off the water.

The integuments having been divided with a lancet, a trochar was introduced about three quarters of an inch external to the mesial line, near the junction of the edge of the fontanelle with the margin of the parietal bone. The instrument being inclined a little inwards, in this manner it was directed into the lateral ventricle of the right side; no sooner was the stillet withdrawn than the fluid flowed out freely through the canula. The quantity drawn off amounted to eleven ounces. After the discharge of so large a quantity of fluid, the head lost its tension and globular form, and became so flaccid, as to allow the remaining quantity of water to gravitate backwards, giving the head a very elongated appearance. To support the parts a double-headed roller was applied loosely, the edges of the incision being previously brought together with adhesive plaster. The child sunk very low immediately after the operation; however, after some time, the urgent symptoms were suppressed. From this period up to four weeks after, every thing was doing remarkably well, the head filled again; but not to one-half of its original size. The operation was again performed on the left side, in the same situation as on the right. The child began visibly to improve; no convulsions whatever occurred after the first operation; four weeks more elapsed, and the head was not near the size it presented before the second operation; so much was it lessened, that another operation was deferred for a future period. At this time ten weeks had elapsed; the child was free from convulsions; the eyes were quite sensible to light, and the little patient did not exhibit any lethargic symptoms. In four days after he began to get uneasy and restless; three more had not passed by when he was seized with convulsions that terminated in death. I was immediately called to see the child; and having accused the mother of neglecting it in some way, she acknowledged to have given it wine regularly for five days before, stating, as her reason for doing so, "she thought it would hasten the cure, and not do him any harm, he was so much better."

On examining the head after death, the different places where the ossific matter was wanting were filled up by a membrane, which was almost entirely converted into bone. The sutures were greatly closed in, being not more than the eighth of an inch apart. All the parts within the lateral ventricles appeared in a healthy state; there was no softening of the structure of the brain whatever; no over-gorged condition of the vessels, or increase in vascularity.

In this case I think there are some points particularly worthy of attention. First—from the time of the first operation until eleven weeks after, no convulsions ensued. Secondly—four weeks from the first operation the child was sensible to light; and lastly, the relaxed state of the integuments allowed the process of ossification to advance in a most remarkable degree. The treatment after the operation consisted chiefly in cold to the head, local blood-letting, purgatives of calomel and chalk.

There is no doubt in this case death was caused by injudicious management of the mother; but, if the reader should continue sceptical as to the propriety of the operation, I would refer him to a case treated successfully by it, in the ninth volume of the Medico Chirurgical Transactions.

Dublin Journal of Medical Science, March 1843, *p.* 38.

18.—DIABETES MELLITUS SUCCESSFULLY TREATED BY IODURET OF IRON.

[This case was admitted into the Hôtel Dieu, having experienced the premonitory symptoms of diabetes three weeks previously, which were now completely confirmed; he passed fifteen quarts of urine daily, which contained a considerable quantity of sugar.]

The treatment consisted in restricting him to animal diet, the administration of a bottle of claret daily, with a flask of Bagnols wine, broth without bread, and lemonade, &c., for drink; he also took four pills, each containing five grains of the ioduret of iron, in the twenty-four hours. Under this mode of treatment the quantity of urine discharged soon diminished; after the third day the man passed only twelve quarts; during the subsequent days the quantity underwent a still greater diminution, and the thirst, together with the other symptoms of diabetes, subsided; the urine discharged exceeded the quantity of fluid ingested by about a pint, and contained but a very small proportion of saccharine matter.

On the 30th of September he drank about three quarts of tizan, in addition to his wine and broth, and passed four quarts of urine. From the 30th of September to the 4th of October the treatment was continued (the number of pills being increased to five), and the improvement of the patient kept pace with it; the quantity of urine passed, at the latter date, was nearly normal, and it contained hardly a trace of sugar: the thirst had ceased; the strength was returning, and the patient was enabled to leave the

hospital on the 5th of October in good health. He was seen a few days afterwards in town, and continued well.

[The ioduret of iron must have had considerable effect in this case, as the usual diet of animal food, &c. recommended in these cases had previously failed in doing good till combined with this medicine.]

Provincial Med. and Surg. Journal, Nov. 5, 1842, *p.* 112.

19.—ON THE PREVENTION OF SCURVY.

By William Baly, M.D, Physician to the General Penitentiary, and Lecturer on Forensic Medicine at St. Bartholomew's Hospital, &c.

[In Retrospect, Vol. VI., p. 109, we gave an interesting account of the use of potatoes in sea scurvy, by Mr. Dalton, of Cheltenham. Dr. Baly in the present article shews their efficacy in preventing scurvy in prisons, workhouses, and pauper lunatic asylums. They may be taken at sea in the raw state as recommended by Mr. Dalton, peeled and sliced like cucumbers, with a little vinegar; but are found equally efficacious in the boiled state, which is of course a preferable way of using them when they can be procured in sufficient quantity. On examining the prisoners in the Milbank Penitentiary, Dr. Baly found that scurvy was of rather frequent occurrence amongst the military offenders, whilst it was never seen amongst the more numerous class—the convicts. On examining the diet of the former it was found to consist almost exclusively of bread, meat, gruel, and rice soup, without vegetables; for nine months in the year only one pint of pea soup, with vegetables in it was allowed each week, and for six months in the year there was allowed half a pound of potatoes weekly; no potatoes however seem to have been allowed for the first six months of their imprisonment: whereas the weekly diet of the convicts consisted of one pint and one pint and a half of pea soup, with vegetables, and five pounds of potatoes besides bread, meat, cheese, gruel, broth, and milk. On perceiving that the existence of scurvy amongst the military prisoners could only be attributed to the want of vegetable food, Dr. Baly recommended that the allowance of potatoes should be increased to two pounds weekly during the first three months of their imprisonment, three pounds during the second three months, and four pounds after the expiration of six months. This addition to the dietary of the military prisoners was made in January, 1842, and not a single case of scurvy has since appeared. Previous to 1822 the weekly allowance of potatoes was six and seven pounds; after that period the potatoes were wholly omitted, and the consequence was the first commencement of scurvy, which had never before shewn itself in the Penitentiary. In little more than six months more than one half of the whole number of prisoners (858) were affected by it. Dr. Baly has since made minute enquiry as to the existence of scurvy in different prisons and pauper lunatic

asylums of the country, and finds that he is fully borne out in his opinion, that when this disease exists to any extent it may be attributed in a great measure to the want of potatoes in the diet of the residents. He says]

The facts, then, which I have been able to extract from the Reports of the Prison Inspectors powerfully corroborate the results of my own experience as to the value of potatoes in preventing scurvy. Wherever this disease has prevailed, there the diet of the prisoners, though often abundant in other respects, has contained no potatoes, or only a very small quantity (as at Wakefield). In several prisons the occurrence of scurvy has wholly ceased on the addition of a few pounds of potatoes being made to the weekly dietary. The circumstance that the Reports make no mention of the prevalence of scurvy in certain prisons, where the nature of the food would lead us to expect it, I have shown to be capable of explanation. I shall only add, that there are many prisons in which the diet, from its unvaried character and the absence of animal food, as well as green vegetables, is apparently most inadequate to the maintenance of health; and where, nevertheless, from its containing abundance of potatoes, scurvy is not produced. Stafford County Goal may be taken as an example. In this prison the weekly allowance of food consists of twelve pounds and a quarter of bread, twenty-one pints of gruel, seven pounds of potatoes, and a sufficient quantity of salt. Neither meat nor soup is tasted by the prisoners; yet scurvy does not occur. I have recently had the opportunity of examining seventy prisoners who had been confined in Stafford Goal for periods varying from three to six months; and I could not find one who presented any trace of scorbutic disease.

The foregoing facts obviously admit of an important practical application. Other succulent vegetables being comparatively expensive, and their supply uncertain, potatoes (to the amount of from three to six pounds weekly) ought to form part of the dietary of all prisons, workhouses, pauper lunatic asylums, and similar institutions, where the food of the inmates is regulated by principles of strict economy. This is already very generally the case. But, besides the instances to the contrary, already adduced from the Prison Reports, I may mention that the magistrates of the City of London have recently excluded from the dietary of the prisons under their jurisdiction potatoes and all succulent vegetables, with the exception of the small quantity contained in a pint or two pints of soup allowed weekly. This I cannot but regard as a dangerous experiment. Scurvy has been a frequent disease in lunatic asylums, and still is so in British merchant vessels. In both its occurrence might, without difficulty, be wholly prevented. In the navy, the ships, before putting to sea, are always provided with a sufficient quantity of lemon-juice; but in the merchant-service this is too often neglected, to avoid expense perhaps as well as trouble. Potatoes, since they would serve for food, while they preserve the health of the sailors, if not too bulky, might be preferred by many ship-owners.

A glance at the chemical analysis of the potatoe at once explains its antiscorbutic virtue. The various fruits, succulent roots and herbs, which have the property of preventing and curing scurvy, all contain, dissolved in their juices, one or more organic acids—such as the citric, tartaric, and malic acids. Sometimes these acids exist in the free state, but more generally they are combined with potash or lime, or with both these bases. Now potatoes have been submitted to most elaborate chemical examination by Einhoff and Vauquelin; and by both these chemists they have been found to contain a vegetable acid in considerable quantity. According to Einhoff, this acid is the tartaric combined with potash and lime. According to Vanquelin, it is the citric, partly in combination with those bases, and partly in the free state. The farinaceous seeds, as wheat, barley, oats, and rye, which are destitute of antiscorbutic property, contain no organic or vegetable acids.

Medical Gazette, Feb. 10, 1843, *p.* 702.

20.—OBSERVATIONS ON CASES OF ALBUMINOUS URINE.

By Drs. Bright and Barlow, Physicians to Guy's Hospital, &c.

[A most interesting series of cases is published in the last volume of Guy's Hospital Reports, with reference to disease of the kidney. The male and female clinical wards of that Hospital have been for a time almost exclusively devoted to such patients as were affected with albuminous urine; in order that this interesting, and too much neglected disease, might be better observed, and the result of observations more regularly and faithfully recorded. The first fruit of this arrangement, has been the production of a paper, which occupies above one hundred pages of the last No. of Guy's Hospital Reports, and which deserves to form a separate volume rather than a paper in a periodical. As it will not be in our power to find room for more than copious extracts from this paper, we will endeavour to condense into as small a compass as possible some of the most striking symptoms, and the leading indications of the treatment which were adopted. The following case will illustrate the]

Treatment by mild mercurials.

George Hollowell, aged 16, with light hair and eyes, and fair complexion, of middling stature; living in Spitalfields: has lived well, and enjoyed good health, till during the last four months: had measles, hooping-cough, and small-pox, when very young; and fever four years ago: has lately been an errand-boy, and has been much exposed to wet and cold in consequence: never, to his knowledge, has taken mercury, or had a blow on the loins: has at times suffered from deafness; and from imperfect vision, in consequence of a speck on the cornea: and about three months ago was subject to severe pain in his loins, which afterwards was felt in the thoracic parietes, and subsequently in his left leg; but he never had any

paralytic affection, vertigo, or drowsiness. The urine has been abundant; and during the last two or three weeks he has occasionally been called to micturate once or twice during the night: for the last four months has had cough, with slight expectoration, and shortness of breath on exertion. About two months ago he observed his face swollen and puffy, and afterwards his legs, his face being most so in the morning: and during the last week his scrotum and penis have become very œdematous. He was admitted on the 20th of May. He now looks bloated and puffy: his cheeks and lips are coloured: the eyes look pale and pearly; the pupils are dilated: the skin warm and dry, but not harsh, and never perspires. The body was generally anasarcous, especially the right side, on which he lies: the bowels rather relaxed: the tongue clean and moist: the appetite good. The left side of the chest is resonant, with the exception of a small portion at the base, where the respiration is distant, or inaudible: it is in other parts puerile. On the right side there is extensive dulness, with absence of vibratory thrill when speaking, the dulness varying with his position: respiration is distant; absent at the base: ægophony and bronchial respiration are heard posteriorly about an inch above the lower angle of the scapula; and the right side is larger and more rounded than the left: he has dyspnœa on moving about; and it is increased on lying on the left side: the heart's action is regular: rhythm natural: pulse 104, small, compressible: there is no evidence of venous obstruction: respirations are thirty a minute, occasionally wheezing: sleeps well: passes about twelve ounces of urine in twenty-four hours, alkaline, of a dark straw-colour, and with fishy odour, and of sp. gr. 1025: nitric acid causes effervescence, and a curdy precipitate ensues: heat causes little or no opacity, till a drop or two of acid be added; when copious curdy precipitation ensues, with considerable effervescence : saliva is neutral.

He was ordered to take mist. salina, with fifteen minims of antimonial wine, twenty of spt. æth. nitrici, and five of tinct. digitalis, three times a day; and two grains of hyd. c cretâ, one gr. of p. scillæ, and five grs. of ext. papaveris, every night, and to have low diet: and on the 22d, he passed sixty-seven ounces of urine, of sp. gr. 1014; and on the 23d, 100 ounces at 1009; presenting the same re-action as before. The anasarca gradually diminished in his face and upper extremities: the skin continued dry, generally, but perspired at the flexures of the joints, and in the palms of the hands; and the respiration was hurried, being thirty-two in the minute: the urine, after the 23d, diminished, in quantity to about forty-five ounces daily, and of sp. gr. 1018 or 1019; and the abnormal sounds on respiration and percussion were confined to the lower part of the chest. He could lie equally well on either side; and the œdema was evident only in the loins and scrotum, and very slightly in the feet and ancles: the bowels continued regular, and he had scarcely any nocturnal calls to micturate : and on the 27th he complained of pains in the orbits, with slight deafness and gravedo: the appetite continued good: the tongue clean: the pulse 100, regular:

but the effusion did not diminish much in the thoracic cavity; and there was no tenderness of the gums. He was ordered, on the 30th, to take half a grain of pulv. digitalis, a quarter of a grain of pulv. scillæ, and one grain of pil. hyd. three times a day; but on the 2d of June the digitalis was omitted both in the mixture and powders, as he had been sick; the nausea being preceded by pain and heat across the forehead and eyes, with retching during the night: the bowels were open. He was ordered milk-diet.

On the 3d and 4th the urine diminished to twenty-six ounces, and was of sp. gr. 1030: the unpleasant symptoms in the head and forehead subsided, and there was less deafness; but the abdomen was full, and there was deafness on percussion in the right hypochondriac region. He was ordered a scruple of the colocynth and calomel pill, and a draught of house-medicine, which acted very freely: the urine again increased to about thirty-six ounces daily, and the sp. gr. was from 1019 to 1022, the coagulability being unaltered. He went on without much alteration; the pain in the forehead and heaviness being occasionally present, and he perspired slightly when up.

On the 13th, he was sick; the supra-orbital pain was very severe, and there was puffiness of the left eye-lid. He was ordered to omit the pills first prescribed, and to take half an ounce of liq. ammon. acet., and twenty minims of spt. æth. nitr. three times a day: there was no tenderness of the gums; and thoracic dulness was much diminished; but ægophony below the angle of the scapula still remained.

On the 15th, twenty minims of vin. ferri were given three times a day in cassia-water; and he continued much the same until the 20th, when the pain in the forehead was more severe; the pulse 132; and he had shooting pains down his thighs and legs: had passed, during the last twenty-four hours, fifty-eight ounces of alkaline urine, sp. gr. 1018, and very densely coagulable by nitric acid. He was cupped to eight ounces on the nape of the neck, which partially relieved the pain; and on the 2d of July a blister was applied to the same part. On the 4th of July the skin was hot, and the tongue rather furred: he complained of pain in the head, with heaviness and loss of appetite: the pulse was sharp and frequent. He was bled to six ounces, and ordered the acetate of ammonia mixture with antimonial-wine: he was much relieved by the bleeding; and the pyrexia had passed off by the following day: the legs had become more œdematous since his getting up, but the abdomen and loins were less so: he had no return of the pains, but felt languid; and, on the 18th, he passed thirty-two ounces of urine, the average quantity at this period of sp. gr. 1024. He was ordered to take a grain of sulphate of zinc, and three grs. of extract of camomile, night and morning; and the acetate of ammonia mixture with twenty minims of spt. æth. nit. three times a day. The anasarca continued slightly to increase· the zinc was increased to two grains for a dose; and on the 27th, the spt. æth. nit. was doubled in quantity: the bowels were open once or twice daily.

On the 28th, he was prescribed one-sixth of a grain of elaterium, and two grs. of ext. papaveris, which produced several copious watery evacuations, and made him feel very feeble; and he again complained of the pains in his forehead. There was some swelling of the abdomen, with scarcely-detectable fluctuation, and dulness on percussion on the right ride.

On the 30th July, one-tenth of a grain of elaterium, and two grains of ext. papaveris, and three grs. of ext. hæmatoxyli, were ordered three times a day; but was discontinued on August the 1st, when he was much the same, the bowels continuing freely open, and the œdema undiminished. He continued without alteration till the 24th, when he complained of the supra-orbital pains and general headache; and was ordered two scruples of pulv. rhei c potass. sulphat.; and equal parts of ung. iodin. comp., and ung. hyd. nit., were ordered to be rubbed in daily over the region of the liver.

From this date to the 13th of September, no reports were taken; but he had a severe attack of peritonitis, for which local depletion and mercurials, &c. were exhibited, and he was now pretty well again: there was moderate œdema of the legs; and at the junction of the right hypochondriac and epigastric regions there was hardness and dulness on percussion, and fluctuation was detected: the pulse was 88, regular: the skin moist, occasionally perspiring: the urine passed was about fifty ounces, neutral, and rather less coagulable than before: he complained occasionally of pain in the forehead and eyes, and the pupils were very dilated: the abdomen increased gradually in size, and fluctuation became more marked: his aspect was more anæmial and puffy: he complained of thirst, and perspired but very slightly.

The pulse, on the 19th of September, was 96, small, feeble, and compressible: urine was twenty-six ounces, sp. gr. 1036. He was ordered the saline effervescing mixture, with twenty minims of spt. æth. nit., three times a day. The urine increased to about forty-six ounces daily, and was generally of sp. gr. 1020; and continued alkaline or neutral until the 3d of October, when he felt, on the whole, better. The œdema was slight in the legs; the ascites was less, but still very evident; and the urine continued very coagulable. On this day he left the hospital, improved in health, the œdema having subsided. There was still fluid in the abdomen, and the urine was very coagulable, and still neutral, when he was examined in the middle of February, 1843; expressing himself, however, as quite well.

[The following case is a good example to shew *the treatment by elaterium* combined with other medicines.]

Jock Hirsch, aged 40; a large made, dark-complexioned man; a native of Denmark: who, until fifteen years ago, enjoyed very good health; at which time he had an attack of dropsy, which was confined to the abdomen; for which he was laid up in Holland for twenty weeks: from this he recovered. He came to England eleven years since, and continued his occupation of stableman, but indulged

freely in spirits. Since his attaek of aseites, he has usually had occasion to micturate onee or twice in the night; and he states that his urine has been in less quantity. During the last five winters he has had slight attaeks of what he ealls inflammation of the chest, from which he has quickly reeovered: at those times, he experieneed pain in the side, with some diffieulty of breathing, and eough.

Six weeks ago, without any obvious cause, but probably from exposure to cold, he noticed his feet and hands were swollen towards night, but in the morning resuming their usual appearance and size. This shortly became aggravated; and the œdema extended up the thighs and legs, and remained eonstant. He has been treated with diuretics; and for the last two or three days has been troubled with dyspnœa and cough, with eopious expectoration. His urine, latterly, has been passed very frequently, and in very small quantities. He was admitted on July 27th, 1842; and at present his countenance is rather anxious, his eyes pearly, and his faee puffy: the tongue moist and white: the skin, generally, moist and soft: the chest is resonant on pereussion; but mucous and sonorous râles are heard extensively in both lungs, and respiration is hurried and laborious; his eough is troublesome: the heart's aetion is normal: the pulse is 84, small; but the artery feels rigid. The legs are very œdematous, and the abdomen full; but fluetuation is not detected; the bowels are confined: the scars of a blister and eupping, are observed over the liver and serobiculus cordis. The urine passed is about forty ounces in twenty-four hours, the sp. gr. being 1016, and it is very coagulable by heat and acid, and he is called upon several times in the night to pass it. He was ordered, on July 28th, one-fourth of a grain of elaterium three times a-day, and half an ounce of castor-oil immediately, and to have low diet; after which the bowels were open, but not mueh: his eough was very troublesome, preventing his sleeping; and he expectorated a good deal of viscid mucus: the œdema diminished in the feet, which were moist; other parts of the body being dry, and not perspiring. He continued the elaterium twice or three times a-day, aeeording to the eondition of the bowels, whieh were open three or four times daily; and on the 2d of August the acetate of ammonia, with half a draehm of antimonial wine, were ordered three times a-day; and the elaterium was given every morning. His cough became less troublesome, the expeetoration easier, and diminished, and the respiration less hurried; the bronchitic râles gradually disappeared, he slept better, and perspired partially. The bowels were very open, and the evacuations watery: he complained of pain in his head; and was ordered, on the 5th of August, a grain of camphor, and four of ext. of hyose. every night; and one-eighth of a grain of elaterium was given every morning. The condition and quantity of the urine was unaltered; and the œdema had very much diminished in the legs, the faee being puffy.

On the 9th, the appetite being improved, he was ordered middle diet: the œdema eontinued diminishing, and the skin beeame moist; the noeturnal micturitions much less frequent: the bowels were regularly and freely open; and on the 15th the urine passed was

about forty ounces in twenty-four hours, rather dingy, very coagulable, and of sp. gr. 1010. He complained much of weakness: the face was puffy and pale, and the legs but very slightly œdematous. He was ordered to take the infus. gent. comp. with ten minims of acid. nit. dil. three times a-day, and to omit the elaterium. He improved in strength, and looked better and more lively: the bowels continued regular, and he perspired freely; the urine remaining very coagulable, and the sp. gravity being 1012.

On August 23d he left the hospital, with very slight œdema of the ancles, and puffiness beneath the eyes.

The urine of this patient was found by Dr. Rees to contain 4·5 grs. of albumen in a fluid ounce: it contained no lithic acid.

[The next case shews the treatment by *antimonials*, and chiefly by the *potassio-tartrate*, which was also used in most of the cases treated by elaterium.]

Edward Stamford, aged 45; ægrot. four months; a bony, muscular man, with light hair, grey eyes, and tranquil countenance, and rather sallow; leading a sea-faring life in the coasting trade; married, having three children; accustomed to drink porter to the extent of three or four pints daily, but no spirits, and having for the most part enjoyed good health: suffered from rheumatism eight years ago, and from scarlatina twelve years ago, and has had hæmorrhoïds to slight extent: has worked hard, and been much exposed to weather and its vicissitudes: never took much mercury, but was once salivated after taking mercury for five days for rheumatism: has had gonorrhœa, never syphilis: has been in the habit of perspiring considerably when at work, but not since his illness: was never in the habit of micturating nocturnally till within the last two months, during which time the secretion of urine has been much more abundant than previously. Four months ago, having been cast away at Hastings, and much exposed to wet and hardship (but not want of food), his legs and ancles became much swelled; having for about a month previously found them slightly enlarged. He was free from pain, but ceased to perspire; and has had, since that occurrence, shortness of breath on exertion.

At the time of admission, he complains only of the swelling of his extremities: the chest is resonant: respiration natural: heart's action regular: pulse 86, regular, rather small, compressible: skin is rather harsh and dry: a scar exists on the left side of the thorax, the result, he says, of scurvy when at sea: and on his left leg he has an extensive nævus maternus, very slightly elevated above the surrounding surface. The face is sallow, not very pale: conjunctivæ bloodless: tongue whitish: saliva rather acid: bowels regular.

Urine light-coloured; slightly coagulable by heat, more so by nitric acid; neutral; sp. gr. 1009.

Ordered, half a drachm of compound jalap powder immediately, and julepum ammon. acet. with half a drachm of wine of potassio-tartrate of antimony every six hours.

On the 2d of Sept. he was ordered to take a quarter of a grain of

potassio-tartrate of antimony, with four grains of extract of hyoscyamus every night; to continue his mixture, to repeat the powder occasionally, and to be bled to eight ounces.

He slowly and gradually improved; the dyspnœa diminishing, and the nocturnal micturations becoming less frequent. The same treatment was continued throughout; and on the 5th of October he had slight œdema of the legs, his strength was improved, and he only felt the dyspnœa upon exertion. His tongue was clean and moist; his pulse 72, regular and rather feeble; and his countenance less anæmial.

The urine was abundant, being never less than 63, and on one occasion as much as 106 ounces in twenty-four hours: the sp. gr. was uniformly 1010.

On the 5th of October, when he left the hospital, it amounted to 88 ounces in twenty-four hours, was slightly coagulable by nitric acid, and scarcely so by heat.

Guy's Hospital Reports, April 1843, *p.* 246—269.

21.—TREATMENT OF PNEUMONIA IN CHILDREN.

By Charles West, M.D., Physician to the Royal Infirmary for Children, and to the Finsbury Dispensary, &c.

[After a most able account of the morbid anatomy and symptoms of pneumonia in children, Dr. West proceeds to the *Treatment* as follows:]

I will now endeavour to sum up as briefly as possible what I think I have learned of the treatment of this disease by careful and unprejudiced observation. I do so, however, with great diffidence, for I feel that none but they who have grown grey in the practice of their profession, and who can preface their remarks by appealing to "lengthened meditation, and to the diligent and faithful observation of many years," are in a position to claim for their opinions on such a subject any consideration. I can only plead my excuse, in the words of Sydenham; if indeed there be not something of presumption in borrowing the expressions of that great man: "Cæterùm quantacunque fuerint aliorum conamina, semper existimavi mihi vitalis auræ usum frustra datum fore, nisi et ipse in hoc stadio versatus, symbolum aliquod, utcunque exiguum, in commune Medicinæ ærarium contribucrem."

Depletion. The first rank as a curative agent in the treatment of idiopathic pneumonia, I would unhesitatingly assign to depletion. It is true indeed that on this, as on some other points, my experience differs from that of French writers who have studied the disease at the children's hospital at Paris. One of these gentlemen has affirmed that depletion, whether general or local, invariably debilitates the organism, and accelerates the fatal event. True as

this assertion may be of pneumonia occurring under the peculiar circumstances which that institution presents, it cannot be extended to it as it is seen in this country. In no case of idiopathic pneumonia which came at an early stage under my notice, have I had occasion to regret the employment of depletion carried so far as sensibly to affect the system. In children of two years old and upwards I have usually resorted to venesection; but in younger subjects have contented myself with the application of leeches. From a child of two years old I have been accustomed to take ʒiv. of blood, and to direct the application of four or six leeches beneath the scapulæ if the symptoms should appear unrelieved after the lapse of a few hours. The effects produced by one bleeding in some of these cases have been most striking, the violent symptoms have sometimes yielded at once, and recovery has gone on uninterruptedly almost without the employment of any other remedy. Of the frequent repetition of bleeding in *these cases*, whether from the arm or by leeches, I have no experience, but my conviction is that children *generally* bear repeated bleedings ill, and I therefore do not practise them. That form of pneumonia which develops itself out of catarrh appears to be least under the control of depletion; no instance having come under my notice in which the attack was cut short by its employment, though here too, local bleeding at the outset is often beneficial.

Tartar-emetic. The tartar-emetic is a remedy of great value in the treatment of pneumonia; but I can by no means subscribe to the unqualified recommendation of it by some French physicians in all forms and at all stages of the disease. I would rather say of it what Wolfgang Wedel says of opium, "Sacra vitæ anchora, circumspecte agentibus, Cymba Charontis in manu imperiti." The cases in which it has seemed to me to be of the greatest service were those in which the pneumonia developed itself out of previous catarrhal symptoms, or in which it supervened on measles, or came on in the course of hooping-cough. In such cases, antimony given in doses of a quarter of a grain to a child of two years old, repeated every ten minutes, till free vomiting is produced, and afterwards continued every two or three hours for forty-eight or sixty hours, has often appeared to be of the most essential service, and the preservation of the patient's life has seemed in several instances to be due to its employment. In pneumonia, too, which has not been preceded by catarrhal symptoms; if after venesection the respiration still continues as hurried as before, and the condition of the patient has been apparently but little improved by that measure, tartar-emetic has seemed to be extremely useful. I have been accustomed to give it in large doses, as a quarter of a grain for a child two years old, and to repeat it every two hours for twenty-four hours, and have observed its use to be followed by a great diminution in the frequency of the respiration, and considerable relief to the distress of the patient; and believe that when given in these cases it paves the way for the advantageous employment of mercury. In no instance, however, in which pneumonia had been

neglected, so that the period for depletion was past, and in which distinct bronchial respiration was audible, have I seen beneficial results from the employment of antimony in large doses, as recommended by many French practitioners. It is true that the heat of skin will subside and the respiration will diminish in frequency; thus inducing a treacherous appearance of improvement; but the strength of the patient is seriously impaired by it, the occurrence of a comatose condition, or of what the Germans have called the paralytic stage, will be hastened, and the fatal event accelerated, as I have learned by sad experience in cases where I gave this mode of treatment a full trial. It is not meant, however, that after the supervention of bronchial respiration, antimony ought never to be given, but only that under such circumstances it has appeared to me that it should not be employed except in small doses and in combination with other remedies.

Calomel. A very high rank as a remedial agent in the treatment of idiopathic pneumonia must be given to calomel. I have been accustomed, after due depletion, to administer calomel in doses of two grains, combined with a quarter of a grain of tartar-emetic, and half a grain of Dover's powder, and to repeat it every four hours for children of four years of age; diminishing the antimony after the lapse of twenty-four hours, if distressing sickness were occasioned by it, but persevering in the use of calomel, provided the patient was not over-purged, until the disease began to yield or the gums showed signs of the mercurial action. The latter occurrence has been by no means frequent, and in no instance have I met with dangerous mercurial affection of the mouth from the employment of calomel in these cases. It has always been my custom to suspend the use of calomel for twelve hours immediately on the first appearance of mercurial affection, and if after the lapse of that time the signs of mercurialization had not increased, to return to its use in smaller doses, and repeated at longer intervals, provided the symptoms of pneumonia were so urgent as to demand its continuance. I have oftener been harassed by the purging which calomel induces, though this may be in a great degree controlled by combining it with Dover's powder. Besides the inconvenience and danger attending over-purging, calomel has seemed in some instances, especially in infants, to occasion a very harassing nausea and vomiting, which have rendered its discontinuance necessary, lest the patient should suffer from the want of sufficient nutriment. In such cases I have had recourse to mercurial inunction, and under its employment recovery has taken place even where circumstances had seemed to warrant none but a most unfavourable prognosis. It is especially in cases of neglected pneumonia, where the time for depletion has long gone by, where the administration of antimony is evidently contra-indicated by the exhausted state of the patient, and where the existence of diarrhœa forbids the employment of calomel, that the full value of this remedial agent is seen. I have employed it in the proportion of ʒj, rubbed into the thighs or axillæ every four hours, in children of four years of age. I have never

observed salivation induced by it, but have seen the symptoms gradually diminish in severity during its employment, and the solid lung become once more permeable to air.

Stimulants. Usually when the employment of mercurial inunction is indicated, the time for all directly-depressing measures has long passed, and the best means of supporting the patient's strength become matter for serious consideration. No point in the treatment of the disease is more difficult than that of seizing the exact moment when the employment of stimulants becomes necessary, and no general rule for regulating their use can be laid down. It has, however, appeared to me to be seldom safe to withhold them when extensive bronchial respiration exists in a case on its first coming under the care of the practitioner, or when it has supervened in spite of active antiphlogistic treatment. If the patient, too, is beginning to be much purged; if the respiration is becoming more laboured and irregular, though diminished in frequency; and if the pulse is becoming more frequent and above all smaller and smaller, it is high time to resort to their use. Wine is as indispensable in such cases in the pneumonia of children as in that of the adult, and it may be necessary to give it even to infants at the breast. Ammonia may also be advantageously administered in this stage of the disease, either in a mixture with the decoction of senega, or dissolved in milk which conceals its disagreeable pungency better than any other vehicle. If diarrhœa does not exist, strong beef-tea or veal-broth is the best form in which nutriment can be given; but if the bowels are relaxed, arrow-root, or the *decoction blanche** of the French hospitals should be substituted for it.

Blisters. Blisters would probably be employed about this time in the treatment of pneumonia in the adult, but I cannot recommend their application to children. One objection to them arises from the time which elapses before they rise sufficiently, during the greater part of which they inflict considerable pain on the little patient, and make him extremely restless. The sores they produce when they cause vesication are sometimes very dangerous; they may even become gangrenous, and occasion the patient's death. Even if no such unfavourable results follow, they are nevertheless a source of constant annoyance to the child, at first from their soreness, afterwards from the troublesome itching which is felt when they begin to get well. Some pain is unavoidably produced whenever the dressings are changed, and the frequent repetition of this painful process sometimes makes the child take a dislike to its attendants, who seem to it to be the causes of so much suffering. It becomes suspicious of every one and quite unmanageable, while nothing is of greater moment than that a sick child should retain its fondness for its attendants during the whole period of its illness.

* This, which is similar to the white decoction of Sydenham, is prepared by boiling half an ounce of hartshorn shavings, and the inside of a roll, in three pints of water, till reduced to a quart.

Mustard-poultices. It is quite possible that some of these objections may be obviated among the children of the wealthy by that care and those comforts which riches can always command, but I have been led, by the reasons above stated, to discontinue the employment of blisters in the treatment of pneumonia among the children of the poor. The same objections do not apply to the employment of mustard poultices, and in many instances they have seemed to be productive of great good. They produce a much more speedy effect than blisters, and may be applied with safety over a much larger surface, hence they are often of signal benefit in relieving sudden accessions of dyspnœa; while from their not occasioning any breach of surface they may be reapplied as often as the emergencies of any case require.

Of the subsidiary medicinal agents, such as ipecacuanha and the class of expectorants, nothing need be said; but there are one or two points in the general management of the disease not altogether unworthy of notice.

General Management. It is desirable, in all cases of pneumonia at all severe, that infants should be taken from the breast, and that the mother's milk should for a time be given them from a spoon. This is of importance on two accounts; partly because the thirst they experience induces them to suck overmuch, (hence it is well that barley-water or some other diluent be given to them frequently instead of the milk, in order that they may quench their thirst without overloading their stomach;) partly, because the act of sucking is in itself mischievous, since, as must at once be perceived, it taxes the respiratory functions to the utmost.

A second important point is never to allow the children to lie flat in bed or in the nurse's arms, but to place them in a semi-recumbent posture in the arms, or propped up in bed. By so doing respiration is facilitated, since the diaphragm is relieved from the pressure of the abdominal viscera, and that stasis of the fluids in the posterior parts of the lungs is prevented, which has been shown by French writers to be so prejudicial to infants or children labouring under pneumonia.

The only other point to which I will allude is, that when pneumonia has reached an advanced stage, or has involved a considerable extent of the lungs, the children should be moved only with the greatest care and gentleness, lest convulsions should be brought on. Whatever may be the explanation of this occurrence, the danger is by no means an imaginary one, for I have seen instances in which children have been seized with convulsions immediately on being lifted somewhat hastily from bed and placed in a sitting posture; and on this account I have referred to what might seem to be a trivial matter.

British and Foreign Medical Review, April 1843, *p.* 569.

22.—TREATMENT OF GRAVEL, CALCULUS, AND GOUT.

By H. B. Jones, M.A., &c. &c.

[The following remarks are from an interesting review of Mr. Jones' work on the application of Liebig's theory to the prevention and cure of the above diseases: but we have already placed before the reader, in Dr. Bird's papers, so much of Liebig's and Dr. Prout's views on this subject that we will here confine ourselves chiefly to the treatment of the *uric acid diathesis.*]

First, with respect to *exercise*—this should always be regulated by the amount of fatigue produced. Exercise producing perspiration is the most beneficial, and this the more so the colder the air is; as a greater quantity of oxygen is absorbed thereby; we must beware, however, of depressing the vital powers, by which an excess of uric acid might be produced. Sleep should be indulged in only so far as may be necessary to repair the fatigue which exercise has produced. Hot rooms should be avoided. The use of nitrous oxide water has been recommended as the best diluent. By the various preparations of iron we may increase the amount of red particles in the blood and thus influence the quantity of oxygen which is absorbed—the sesqui-oxide of iron has been deemed the best; and as, according to Liebig, it is in this state the iron exists in the red-colouring matter of the blood, there may be some grounds for considering this the best preparation of iron. To facilitate its absorption it should be given newly precipitated from some soluble salt of iron, as from the sesquichloride or persulphate of iron, from which the hydrated peroxide of iron may be formed by adding carbonate of ammonia or soda.

Mr. Jones next considers the treatment by diminishing the non-nitrogenous principles in the blood. This treatment he founds on the principles contained in Liebig's Physiology:—It has been shewn, he says, that the substances which contain no nitrogen, by combining with the oxygen which has been inspired, hinder the action on the uric acid; and it is highly probable that no albumen undergoes metamorphosis until it has served the purposes of life. These are the first principles by which the practice should be governed; and hence by far the most beneficial diet is a moderate quantity of meat, with a much smaller quantity of bread. The kind and quantities of both must be regulated by experiments and by consideration of the habit and exercise of the patient. The quantity of starch in flour, as compared with animal food, renders it unsuitable to live only on bread. Meat alone would be far more beneficial; but in most people the process of respiration almost requires some substance which contains no nitrogen, though it should be taken in small quantities only. If the quantity of bread be small, the quantity of animal food may be proportioned to the exercise and the state of the body; for thus the changes which are going on in the tissues will be repaired, and the oxygen, finding but little non-nitrogenous substance in the blood, will act more readily on the uric acid, chang-

ing it into urea and carbonic acid. Sugar and starch comprehend much the largest part of those substances in vegetables which can be absorbed; nitrogenous and oleaginous substances are present generally in small quantities, though the relative amount of these principles varies much in different species. Thus, potatoes and rice are amongst those in which most starch is found, and these are therefore most inadmissible, while in greens and peas, there is much more nitrogenous matter, which in peas is similar to cheese. Fruits usually contain large quantities of starch and sugar; on this account apples and pears are most objectionable.

Among non-nitrogenous substances we must include fat. If the formula for this is taken, as $C_{11} H_{10} O$, then 31 equivalents of oxygen are required to convert this into carbonic acid and water, and by taking this substance as food, so much oxygen is prevented from acting on the uric acid. Neither should butter be taken in excess. Gelatine, which forms the principal constituent of soup and jellies, may be used as a partial substitute for meat; but as the albuminous tissues cannot be formed from it, it cannot be entirely substituted for it without the strength failing.

With respect to drink, the oxygenated water is best, then water which has been distilled, as being the best solvent. This, however, cannot be had everywhere. Some recommend the water to be filtered. This process removes all the substances suspended, but not those dissolved in it. Boiling the water has also been recommended.

We have already seen that the non-nitrogenous bodies in the blood may be diminished by aperients which act on the liver. These are most useful when the deposit is dark-coloured. Of such medicines, calomel, aloes, colchicum, and colocynth are beneficial, both in large and purgative doses, and also when given in such a way as to increase the secretion of the liver. Hence the efficacy of blue-pill as an alterative.

Sudorifics are sometimes given with advantage. With respect to baths, their action may be considered on the nerves and on the blood, and on each the action is of two kinds; thus, on the nerves there may be a stimulant or a sedative action, and on the blood they are capable of removing substances from it and of enabling them to be absorbed into it. These modes of action depend on the state of the system, the temperature and the substances which are dissolved in the bath. In one point of view, the skin may be looked on as an expansion of the nerves of sensation, and by acting on the nerves of sensation, the whole sytsem may be influenced. The action of the bath on the nerves of sensation depends on its temperature, as well as on the state of the system; thus, in some states, a warm bath causes irritation, and in others, it acts as a sedative, whilst the same is the case with cold applications.

The removal of substances from the blood depends also on the temperature of the bath and the state of the system, and for this the vapour bath is most efficacious. The absorption of substances by the skin, does not seem to depend on the temperature, but on

the state of the system, and on the substances which are contained in the bath. A great part of the benefit derived at Teplitz by those subject to the gout, depends on the absorption of alkalies by the skin.

As it cannot be expected that there will be the same amount of absorption when the system is saturated with moisture, as when a large quantity has been removed by the secretions during the night, it has been directed to take the baths early before food. Mr. Jones suggests two kinds of baths to be used in immediate succession. This is the vapour bath, to remove water and acid substances from the blood, and immediately after an alkaline water bath, by which alkaline water may be taken into the blood. The next point to be attended to, is to keep all the uric acid in the ultimate textures in solution. This may probably be effected by water and alkalies. When these, or their carbonates, are given, they should be taken and dissolved in water at least an hour before food, so as not to interfere with digestion; these medicines may relieve the complaint, but they can never cure it.

When uric acid is deposited in crystals, which may be recognized by their insolubility by heat, when they are soluble in an alkali, alkalies are then required, and this medicine must be given in such quantities as to combine with all the uric acid formed, when the deposit will either disappear altogether, or be changed for the urate of ammonia. By carefully abstaining from all vegetable acids, a crystalline deposit of uric acid will scarcely occur.

Mr. Jones makes a remark, on the effect of salt in promoting the action of oxygen on the substances in the body, viz. that no animal can be fattened, if it is able to obtain much salt. When sailors are long fed on salt meat, which furnishes an abundant supply of alkali to the blood, whilst they are deprived of non-nitrogenous food, an excessive action of oxygen on the tissues of the body takes place, and when this is long continued, the scurvy appears, the salt hastening the rapid changes in the tissues. By diminishing the amount of alkali in the blood, and by giving non-nitrogenous food, the scurvy is cured or prevented, in consequence of such substances being acted on instead of the tissues of the body. This explains the benefit which arises from vegetable acids, from fresh vegetables, from sugar, wine, beer, wort, treacle, potatoes, &c., all which have been used with the best effects.

We now come to the interesting subject of *Gout*, which Mr. Jones holds to be the invariable result of the long continuance of the uric acid diathesis; according to Liebig's views, it is most probable, he says, that great weakness, and inordinate muscular exertions, may increase the amount of metamorphosis in the tissues, and thus give rise to new substances, which must be oxidised in order to be removed, whilst excessive eating, sleeping, and want of exercise, constipation, vegetables, and little secretion by the skin, all produce the same effect,—all lessen the amount of oxidation which is necessary to remove those substances which result from the metamorphosis of the tissues of the body. Physicians of all

ages have insisted on several of these as the cause of gout, and have recommended the opposite of them, as temperance, early rising, moderate exercise, alkalies, and medicines which act on the liver and the skin, as the means of cure. In the language of Professor Liebig, they have declared that the want of oxygen is the cause of gout, and the promotion of its action the only means of effecting a cure, or of hindering a return of the complaint. Numerous authorities are adduced by our author in support of these causes of gout. In Austria, a mode of treatment has been revived, which, in those who can endure it, is most beneficial in the diseases which may be included in the uric acid diathesis, as indigestion, bilious complaints, gout, rheumatism, and skin diseases. At Gräffenburg, in Austrian Silesia, under Pressnitz, the action of oxygen is promoted to a most beneficial extent in these diseases, but to a no less disastrous one in the opposite class of diseases which arise from too much action of oxygen on the body, as in phthisis and scorbutic cachexia. Until Professor Liebig again directed attention to the action of oxygen on the human body, the causes of success and failure were unknown. At Gräffenburg the greatest possible action of the skin is produced by baths. Large quantities of water are required to be taken. Early rising, and a plain, though not strict diet is ordered. By these means, the action of oxygen on the body is promoted to a very great degree; "and death ensues if ever the system is no longer able to furnish matter to resist the action of oxygen;" the condition of health consisting of an equilibrium among all the causes of waste and supply; "and death being that condition in which all resistance on the part of the vital force to the action of oxygen entirely ceases."—*Liebig*.

Much of the treatment at Leamington, and the benefit derived from it, may be accounted for in the same way. At first, abstinence and drastic medicines are ordered, and the strictest diet is enjoined, which consists chiefly of meat, with a small quantity of bread, no fermented liquids, and much exercise. One hour's walk, at the least, before each meal. Large doses of iron are afterwards given. The waters, containing a considerable quantity of common salt, chloride of calcium, Glauber's salt and traces of iron, would assist the more energetic measures of Dr. Jephson, in promoting the action of oxygen in the body, as is soon indicated by the altered complexion.

Professor Liebig's views of gout are, that it is an inflammation in parts in which the usual changes which the oxygen effects, are unable to take place, in consequence of an excess of the non-nitrogenous principles in the body; whilst rheumatism or "the universal gout" seems to arise from the changes being checked by the action of cold on the skin. There are however some points respecting gout and rheumatism which still require to be determined before the whole of the phenomena of these diseases can be perfectly explained. One is the question whether the uric acid is, in the state of health, produced in the ultimate textures, and there undergoes its changes into urea, in which state it is carried to the kidneys by the circulating blood, (and the existence of urea in the blood in

Bright's disease and in cholera is in favour of this view,) or whether in the ultimate textures some other substance is first formed from the tissues, which, when it arrives at the kidneys, is there changed into uric acid, and afterwards into urea, in the way that has been pointed out. If this last be the case, the substance out of which the uric acid is formed must exist in the blood; and it is, our author observes, amongst those substances which are comprehended under under the term, indefinite extractive substances of the blood, that search must be made for it. The probability of some such substance existing is increased by the most accurate examination having as yet failed to detect uric acid or urea in healthy blood.

"Certainly", says the author, "the one or other of these states must exist; either there is an excess of that substance which is capable of producing uric acid when it comes to the kidneys, which is passed during an attack of gout from the systemic capillaries to those of the kidney, and there gives rise to the excess of uric acid which appears in the urine, or, what is perhaps more probable, urate of ammonia itself (formed from the metamorphosis of the tissues) exists in the blood in larger quantities than usual. One or other must exist in the blood, during the fit of the gout, in larger quantities than in the state of health, and from one or other the excess of uric acid appears in the urine, and most probably it is the presence of this substance in the circulation, and the interruption by any causes, as cold and weakness of circulation, of the changes which it is undergoing in the capillaries and in the kidneys, that produces the phenomena of retrocedent and irregular gout. The acid state of the secretions of the skin, stomach, and urine in this disease, has led some physicians to consider acidity as the cause of this disease; such a state of acidity may also arise from a want of action of oxygen on the non-nitrogenous principles, that is, from the oxygen not being present in sufficient quantities. In health, when sufficient oxygen is absorbed, the acids formed from the non-nitrogenous food are converted into carbonic acid and water by combining with oxygen; but in gout the deficiency of oxygen renders those changes impossible, and the acids formed, being but very imperfectly or not at all acted on by oxygen, remain in the body undecomposed till they are thrown out in every possible way. By soda, potash, or magnesia taken as medicine, these acids are neutralised, as well as by the carbonates of those alkalies which are decomposed, lactates or acetates being formed. Hence the benefit from alkalies in gouty complaints, but it is only palliative. Such treatment, however, will not prevent the formation of lactic acid; to effect which, all the substances from which this acid most readily arises, especially starch and sugar, should be left off.

"By this action of oxygen, then, an explanation is afforded of the effects of weakness, excessive sleeping, excessive eating, of a want of exercise, as well as of inordinate muscular exertion, of vegetable acids, and of alcohol in the production of gout. For the weakness and inordinate exercise tend to the excessive production of uric acid, disposing to and causing rapid changes in the tissues. Sleep lessens

the quantity of oxygen which can be absorbed, by lessening the number and the strength of the respirations, and in consequence the uric acid formed is not changed. By excessive eating the blood becomes loaded, and contains an excess of those principles which can only be carried off by the action of the oxygen. By acids the uric acid is rendered less soluble, and therefore less easily acted on. Wines are injurious from the alcohol they contain, and acid wines are doubly injurious by both acid and alcohol adding to the excess of non-nitrogenous substances, for which the oxygen has a greater affinity than it has for the nitrogenous substances."

The juvantia give additional strength to this view. We see abstinence alone will cure by giving no fresh fuel, the supply of oxygen remains undiminished and gradually consumes those non-nitrogenous (carbonaceous) substances which had been previously so heaped up as to threaten to put an end to all action. Exertion increases the respiration, and thus causes more oxygen to be absorbed, and thus more action takes place.

Purgatives remove the bile, which contains an excess of carbonaceous matter, on which the oxygen would otherwise act to the hindrance of its action on the nitrogenous substances; whilst alkalies and water hold the uric acid dissolved, and promote the changes in the tissues. By these views the relation of gout to acidity, to uric acid, and oxalate of lime calculi, is most plain. They all arise from the same cause, the want of action of oxygen. The indications of treatment, as suggested by the theoretical views of Liebig, are thus summed up in the words of Sohönlein: seil.

1st. To neutralize any diseased products which may be formed.

2nd. In proportion as they are formed, to cause them to be removed, in order to prevent any accumulation which may cause a paroxysm.

3rd. To render the formation of any fresh diseased products impossible.

Medico-Chirurgical Review, April 1843, *p.* 348.

23.—ON THE INHALATION OF AMMONIA GAS.

By Alfred Smee, Esq., F.R.S., Surgeon to the Bank of England, &c.

[The inhalation of gases is, perhaps, too much neglected in particular diseases. At present we know but little respecting the properties of gases upon the animal economy, but when we remember the rapidly deleterious effects of the vapour of hydro-cyanic acid, of bromine, of sulphuretted hydrogen, we may suppose that there may be other gases which might act medicinally and beneficially. Mr. Smee brings forwards the following interesting paper respecting the use of ammonia gas for stimulating the mucous membrane of the mouth, fauces, trachea, and bronchi.]

The inhalation of so stimulating a gas as ammonia is well known to be, at first sight, perfectly startling to those who have never

either tried it on their own persons or never seen it applied by others, but it is really, in many cases, with proper management, a simple and one of the most delightful remedies that can be employed. If a bottle, containing a solution of the gas, as the common liquor ammonia or hartshorn, be opened, part of the gas escapes. If this comes in contact with the conjunctiva it stimulates it and causes much fluid to be poured from its secreting surface, and its influence on the delicate lining membrane of the nasal cavities is not less powerful. In fact, this vapour appears immediately to cause a secretion of fluid from the parts with which it comes in contact.

When this gas is absorbed by the mouth in far larger quantities, it appears to cause in a similar manner an increase of the watery part of the secretion, usually passing from all the several parts with which it there can come in contact. *A priori* it might be expected the glottis would resist the intrusion of the gas, but this is by no means found to be the case when in a diluted state, as it apparently readily passes into the innermost recesses of the lungs, and instead of producing disagreeable effects, causes sensations which are extremely grateful and agreeable. The gaseous nature of ammonia allows it to come in contact with every chink of the air-passages, and even the upper and back parts of the pharynx, which from its peculiar construction resists the application of other topical remedies.

The immediate effect of the inhalation of this gas is to cause the fauces and pharynx, before dry, and perhaps covered with inspissated adherent mucus, to force out a watery fluid to lubricate and relieve the membrane; the phlegm will then separate and come away, and a more or less instantaneous relief is frequently felt. We all know the expectorant qualities of ammonia, and the value of its sesquicarbonate, whenever the system will bear its administration, as a general remedy, but its qualities, when used as a local agent, seem to be more active in this respect than when used as a general remedy.

The most convenient mode of administering the ammoniacal gas is to use the vapour that spontaneously exhales from solutions of ammonia. Of these it is preferable not to employ a solution stronger than the liquor ammoniæ of the shops, or weaker than the same diluted to twenty or thirty times its quantity of water. For general purposes, perhaps, the usual liquor may be employed diluted with ten times its bulk of water, but the strength of the ammonia must be regulated by the medical practitioner according to the nature of the case, and the susceptibility of the patient, and even according to the strength of the original liquor.

The liquor ammoniæ, diluted according to the discretion of the medical attendant, may be placed in a common phial, and as much should be inserted as to occupy about the two lower inches of the bottle. The patient has only to apply his lips to the mouth of this homely contrivance, and draw in his breath, when he will inhale a certain quantity of the ammonia. Before the application of the mouth to the bottle, the patient should take care that none of the liquid adheres to the aperture, which on coming in contact with his

lips would cause them to smart, and being no part of the cure, the pain would be perfectly useless. The number of inspirations to be taken at one time may be determined by the strength of the water and the effect of the remedy. Two, three, or four inspirations, will in general be sufficient at one time, but this must be repeated three or four times during the day.

A more convenient apparatus than the simple one last described may be readily made and advantageously employed. A bottle may be selected, and a cork procured, bored with two holes. Into one a piece of bent glass tube may be inserted, having the one end dilated for the convenience of applying the lips. Into the second hole of the cork a tube should be thrust, within half an inch of the liquid, so that when the patient inhales, the ammonia passing from the liquid tube is taken into the chest, and this is perhaps to be preferred to drawing the breath itself through the solution of ammonia.

Though the last apparatus will answer the purpose more or less efficiently, I have yet to describe a far more elegant device to be employed as an inhaling apparatus. A two-necked bottle is procured; into one mouth a tube is adapted, to serve as a mouth-piece. This tube is ground to fit the neck, and when not used is removed for the insertion of a common stopper, that the strength of the ammonia may be preserved. Into the neck another tube is ground, into the inside of which another stopper is fixed. When the inhaler is in operation, this stopper is withdrawn to allow the air to pass into the bottle, but when not wanted it serves to close the apparatus. This inhaler is most admirably adapted for the desired purpose, and perhaps for gaseous inhalations cannot well be surpassed. The diluted liquor ammoniæ at the bottom of the vessel extending to within half an inch of the latter tube.

The vapour inhaled from the liquor ammoniæ does not seem to pass away immediately, but may be distinctly tasted for some minutes afterwards, even subsequently to the commencement of its beneficial action. The value of the local application of this gas is seen in cases of what is called dryness of the throat, which appears to arise from a deficiency of the secretion of the liquid which normally lubricates the mucous membrane. The mucus from that cause becomes dry, and causes much uneasiness to the individual. The common and popular remedy of applying hartshorn and oil to the throat for various affections is probably in great part owing to the inhalation of the vapour of the ammonia, which necessarily at the same time occurs, as it is impossible that this external application can be effected without a large quantity being imbibed at the same time.

Ammonia gas is also beneficial in chronic hoarseness, especially in that which is often left as a sequela of influenza. This gas affords great relief and comfort to the relaxed, swollen, and apparently semi-œdematous state of the mucous membrane, which supervenes from remaining in crowded, overheated, and ill-ventilated rooms, where every person not only inhales his own breath over and over again, but is under the infliction of breathing his neighbour's

also. In cases of incipient cynanche tonsillaris, it appears to be of much value if used at the very commencement of the attack; the slight impediment to deglutition, which is generally the first premonitory sign, is sometimes removed by one or two inhalations. There are occasionally cases of syphilitic ulceration of the throat witnessed, where the patient suffers from such debility that the practitioner is afraid of applying any remedy capable of depressing the system, where the inhalation of the gas might probably be of great service, but as such a case has not occurred in my own practice for a long period, I am unable to speak practically upon the matter.

In old standing cases of asthma, especially in those in which the medical man considers that the internal use of the sesquicarbonate of ammonia is indispensable, in which the extremities are cold, the pulse feeble, and the general vital powers depressed, the local application of ammonia is particularly grateful, the patients feeling, as they describe it, a glow after its exhibition, and the warmth first imparted to the lungs extending by degrees over their whole system.

In cases where the patient feels a peculiar sense of contraction upon passing into cold atmospheres, as though the lungs resisted the intrusion of so unpleasant an agent, the inhalation of ammonia seems to quiet the spasmodic action, relieve the breathing, and give a comfort to the whole chest, which is delightful to the feelings of the sufferer.

Perhaps it is almost needless to notice that this remedy would be deleterious when either special organs or the general system are attacked with acute inflammation, for there is but little doubt that the ammoniacal vapour is a decided stimulus, first locally in those parts with which it comes in contact, and, secondly, on the system in general, by its absorption into the circulation. As a stimulating agent it must obey the laws of stimulants generally. It should not, therefore, be employed when the part with which it comes in contact is inflamed, nor when a dry parched tongue, a full pulse, and a dry skin, denote a feverish system. In all chronic cases, or even occasionally in acute cases, with a feeble circulation; in fact, whenever the system is depressed, and stimulants are advisable, the inhalation of ammonia may be used with the greatest advantage and comfort to the patient.

For the last two or three years I have occasionally been in the habit of inhaling ammonia as a luxury during the prevalence of the easterly winds, which by their action so dreadfully dry up and parch all living creatures.

The application of ammoniacal vapour, in the manner which has been already pointed out, is rather an agent of comfort, removing slight ailments and troublesome affections, than a remedy which is capable of saving life from violent diseases, except indeed when used as an antidote to certain poisons. Still, however, there is no complaint however trifling, no system however unimportant (if attended with discomfort and inconvenience to mankind), that it is not the duty of the medical man to endeavour to relieve or remove.

Medical Gazette, April 7, 1843, p. 59.

24.—ON HÆMOSTASIS.

By Thomas H. Buckler, M.D., Baltimore.

[The term hæmostasis merely serves to express the act of arresting the blood in its course. The way this is to be performed, and the states of the system to which this peculiar method is applicable, is the subject of an interesting paper by Dr. Buckler, of Baltimore, in the *Maryland Medical and Surgical Journal*. We cannot say that we altogether agree with Dr. Buckler in his views, although they may be very ingenious and appear to be supported by the several cases which he advances in confirmation. Dr. Buckler received his first hint respecting this new mode of arresting the flow of blood, from the following circumstance.]

About five years since, an uneducated man, of leucophlegmatic habit, presenting all the physical appearances of an inhabitant of a malarious district, applied to me for the relief of intermitting fever, under which he had laboured for a long time. He said that he had been using a great number of remedies, most of which were suggested by different quacks, in the neighbourhood from which he came; and that the only thing which had done him any good was to tie eel-skins tightly about the upper part of each arm, a short time before the expected return of his chill. At first, I was disposed to think that the eel-skins could only have arrested his chill, through some influence over his imagination; but the question at once presented was, why have not other remedies exerted the same influence; for most of these were necromantic in character? There may be more meaning in charms, than we are at first disposed to believe. On examining the arms of this man, the eel-skins being at the time around them, I found the veins, which were unusually abundant, remarkably swollen from the complete obstruction of the venous circulation. It then occurred to me, that the prevention of his chill might possibly be owing to the accumulation of blood in the arms and its consequent withdrawal from the common current of the circulation, by which it was prevented from accumulating about the spleen and portal vessels.

[After numerous experiments, Dr. Buckler states his conviction that this method is applicable to the following conditions:]

1. To prevent hæmorrhage resulting from either rhexis, diapedesis, or from wounds inflicted on blood-vessels.

2. To relieve inflammatory engorgement in parenchymatous organs, or inflammations of membranous tissues.

3. To remove simple vascular congestion, and restore the balance of the circulation.

Physiological Effects.—If we tie a bandage about a limb, sufficiently tight to arrest completely the venous circulation, and at the same time allow the arteries to pulsate, we shall note the following phenomena:—The veins become swollen and look as though they would burst; all the blood they contain, is withdrawn from the general circulation, and is as effectually cut off from it, for a time, as if it

had been drawn in a basin. This then is the depletory effect of the operation. Next, we notice that the patient complains of stinging or tingling in the limb, and of pain shooting along the course of the nerves; which is the irritant effect of arresting the blood. Lastly, we observe, when the bandages remain on a sufficient length of time, that the skin becomes of a livid red, owing to excessive injection of the capillaries; in other words, the whole limb appears as if it had been placed under the exhausted receiver of an air pump: and this last, we shall find to be the vascular revulsive effect of hæmostasis. If the arrestation of the venous circulation be practised on all the extremities at once, we observe other effects. The skin becomes relaxed, and the pulsation of the heart and arteries weakened. If the vessels of the whole body are in a state of repletion or fulness at the time, we shall perhaps notice only the above phenomena. But if on the contrary, the heart and arteries are deprived of a portion of their normal quantity of blood, owing either to pre-existing anæmia, or to the loss of the vital fluid from bleeding, so that the vessels shall be partially empty, we then notice certain other phenomena to result from arresting the venous circulation of the extremities. 1. The exhalents of the skin pour out the most abundant perspiration: 2. The individual complains of feeling light about the head, of weakness, and sick stomach: 3. If we feel the carotids we find them scarcely pulsating, and in a word all the phenomena of syncope are found to take place.

The blood of the vena cava ascendens returns to the heart, with the force it derives from the vessels which supply it, whether we consider that force as residing in the capillary vessels, or as dependent upon a vis a tergo communicated by the contraction of the heart and arteries. If then we arrest the return-blood in the upper third of one thigh, we cut off at once half of that force by which the blood is sent through the vena cava back to the heart; and we do more than this, for we arrest at the same time one half of the return-blood itself from the extremities. If we apply a tourniquet to the thigh of the opposite side, we take away nearly the whole supply of blood sent to the lower portion of the vena cava, and deprive the venous circulation of a large amount of that force which returns the blood to the right side of the heart. If at the same time the veins of the upper extremities be compressed, the whole of that circulation which we denominate peripheral is arrested.

The effects of hæmostasis are always in a direct ratio to the quantity of blood in the circulation.—If we fill an eel-skin with water and then try by tying it, to alter the quantity of fluid which occupies its different portions, we shall be foiled. But if a part of the water be emptied out, we shall be able to put ties about the skin, in such a way, that any portion will be nearly or quite empty. Now precisely the same thing happens in applying hæmostasis. In that degree of fulness of the vessels which belongs to a healthy man, after arresting the venous circulation of the extremities, we have noticed very partial effects. The reason of this is at once apparent; the vessels of the extremities were already full even to distention,

and the quantity of blood which could be withdrawn from the central and transferred to the peripheral circulation was of course limited. But when we made trials, in the case of those who were already anemic, or from whom a certain quantity of blood had been previously taken, the effects of hæmostasis before described were very decided. The reason of the difference in the two cases is clear, and the cause of the result in the latter instances perfectly apparent. The vessels of the extremities had been already partially emptied by the previous depletion, and were now capable of holding a quantity of blood sufficient to fill them to the healthy standard, independently of that which they would still hold from over distention, and the quantity of blood withdrawn from the central circulation and consequently cut off from the brain was proportionably great.

Various estimates have been made, by different physiologists, as to the quantity of blood contained in the human body; some have made the quantity 10 pounds, others 32; according to Wrisburg a healthy woman lost 26 pounds by flooding, and 24 pounds were collected after the beheading of a full grown woman.—In different individuals, the quantity of blood varies as much as that of the solids. It would be altogether useless, if it were possible, to fix any definite standard of quantity, and we fear that they who attempt it, may fare like those who sought to discover perpetual motion. Let us suppose the quantity of blood in a healthy individual to be thirty pounds, and that one-third of it, ten pounds, belongs to his extremities, and suppose that hæmostasis is capable by over-distending the vessels, of transferring four pounds (we must make it a calculation of probabilities, it being as difficult to ascertain the exact proportion belonging to different portions of the body, as it would be to make a standard of quantity in the entire body for the whole human family,) from the central to the peripheral circulation, the heart and vessels of the trunk will then contain sixteen pounds, the four pounds which they have lost, being as effectually removed from them for a time, as if it had been drawn from the body. But the depletion which the central circulation has here undergone is partial in its effects, and the withdrawal of blood from the brain is insufficient to produce syncope. If now we open a vein in the arm, the blood drawn will be taken from the 16 pounds in the central circulation, and the flow of it will diminish the quantity of blood supplied to the brain, much more rapidly than if it had been taken from 30 pounds, the quantity common to the whole circulation. Two pounds drawn by bleeding from 16, the quantity in the central circulation, will leave only 14 for the trunk: whereas, had 2 pounds been taken from 30, the whole amount of blood, and hæmostasis had not been applied, it would leave 28, which would be, according to our original proposition, 18 and two-thirds of a pound, instead of 14 for the trunk, and 9 and one-third of a pound, instead of 14, according to hæmostasis, for the extremities. If we draw the blood first, and then apply hæmostasis, the result will of course be the same. Accordingly when we apply hæmostasis in a full state of the circulation, only partial effects will be noted; but if on the contrary, it be

adopted when the vessels are comparatively empty, we shall have the most perfect syncope induced, a condition which is now under our control, and which we can protract to any desirable extent, and this too, without a loss of half the blood that would be required to make an individual faint under ordinary circumstances.

The difficulty of producing syncope, under some circumstances, is doubtless owing to the tardiness with which the blood returns from the brain, because of the obstruction it meets with in the heart and lungs. There is consequently a pressure of the return-blood upwards, which prevents the sinuses and vessels of the brain from being emptied as rapidly as they would be under other circumstances. The correctness of this view may be proved by compressing the veins of the neck, when an individual is sitting up and about to faint for the loss of blood. It is only necessary to apply moderate pressure with the hands, on each side of the neck, so as to arrest the return-blood from the head, and at the same time allow the pulsation of the carotids to go on. Pressure thus applied, when a patient is sitting up, will exert nearly the same influence in preventing syncope, as the removal of the gravity of blood by placing the individual in a recumbent posture.

In inflammation of mucous tissues and of parenchymatous organs, there is generally little pain, with for the most part a weak and feeble circulation. When, on the contrary, inflammation takes place in serous, fibrous, or cartilaginous tissues, pain is severe, and the circulation bounding and active. In parenchymatous organs and mucous membranes, there is abundant loose cellular tissue, into and through which transfusion readily takes place, and also large vessels lying adjacent, in which blood is collected and thus withdrawn from the general circulation. Could we apply the hydrostatic test to a lung during the stage of primary engorgement in commencing pneumonia, we should probably find it containing several ounces of blood more than a healthy lung of the same size. May not this account for the preternaturally depressed pulse which we sometimes find in commencing pneumonia?

The fibrous, cartilaginous, and serous tissues are dense and compact, allowing little or no room for transfusion to go on; and the veins in the neighbourhood of these structures are comparatively small and less abundant, so that blood cannot accumulate in them, and no fluid is consequently withdrawn from the torrent of the circulation. Hence a frank, active, and bold circulation is at once established in inflammation of these and all other similar tissues. For example, the pleura costalis and its adjacent compact cellular tissue are supplied with blood by the intercostal arteries, and the veins which carry back the fluid are very small. Accordingly, when pleurisy takes place, the circulation is (for the reasons before stated) bounding and active. The vessels in the substance of the lungs are very large, abundant, and distributed in exceedingly loose cellular tissue, and for this reason the pulse in pneumonia is weak and feeble. In acute peritonitis the pulse is corded and active, and the largest quantity of blood may be taken without

producing syncope, even when the patient is sitting up in bed. In mucous inflammation of the intestines, there is on the contrary a weak and feeble pulse, and it is often difficult to take a sufficient quantity of blood from the individual, who may be in a perfectly recumbent posture at the time, without producing syncope.

Writers on the diseases of pregnancy very properly attribute the swelling of the veins of the extremities and consequent œdema, which occur in some women during the last months of gestation, to the pressure of the womb on the iliae veins. But here they stop; and have not considered that this accumulation of blood in the extremities, and its consequent withdrawal from the circulation of the trunk, may give rise to other symptoms, which are so common during the last month of pregnancy. Mrs. C., a lady of delicate habit and feeble constitution, complained very much during the last two months of gestation, of the following symptoms; swelling and œdema of the lower extremities, which came on a short time after rising in the morning, and increased as the day advanced; throbbing in the temples, a feeling of fulness about the head, drumming in the ears—*tinnitus aurium*—palpitation of heart, and an occasional feeling of syncope. These symptoms were invariably relieved by lying down. Are we not correct in attributing all the various feelings of which she complained chiefly to the accumulation of blood in the lower extremities, in consequence of which, the trunk was deprived of its normal quantity of circulating fluid, thereby giving rise to the symptoms of anemia? The feelings which this lady experienced are generally said to be nervous; we think it quite as philosophical to attribute them in most cases to the cause which is here assigned.

Mr. R. a gentleman of delicate constitution, tall in stature, pale and anemic in his appearance, had suffered for a long time with varicose enlargement of the veins of his lower extremities. His occupation was that of a clerk, requiring him to stand a great part of each day. The distension of the varices increasing daily, and his strength gradually declining, he was at last taken with exhaustion and syncope; the latter was soon relieved by lying for a short time in a recumbent posture. His symptoms at last grew so distressing that he applied to us for relief. Was not the syncope in this case, owing directly to the abnormal transfer of blood from the central to the peripheral circulation, in consequence of which, the due supply of blood to the brain was cut off, and its innervation interrupted?

In every amputation in which we have seen the tourniquet used, much more blood was invariably lost, than in those instances in which simple compression of the artery by means of the thumb or a key, was resorted to. The difference in the quantity of blood lost, in the two cases, is so great, that the best surgeons are now in the habit of adopting in their own practice, and of recommending to others, compression of the main artery of the limb to be amputated, in place of the old method of using the tourniquet. The cause of the difference in the two methods is obvious; for, when a

tourniquet is applied, the veins of the limb are first compressed and then the arteries; the interval of time, between the interruption of the venous and arterial circulation, being always sufficient for the limb to become charged with blood.—This must happen to a greater or less extent, however dexterous the surgeon may be, in applying the tourniquets in ordinary use. If we had an instrument that would compress the arteries and veins at one moment of time, the difficulty would be in a great measure overcome. I beg leave to propose another remedy; which is to apply tourniquets to every extremity except the one to be amputated,—and then to compress the artery above the point at which the limb is to be severed, the great artery of which should be pressed upon with the thumb, as in ordinary cases. By the adoption of this method, the force required for compression will be trifling; for the force of the heart's action will be so much diminished by the previous application of hæmostasis, that the difficulty of arresting the flow of blood in the artery at the point desired, will be rendered comparatively easy.

When any operation is to be performed on any part of the trunk, from which we have to dread the loss of blood, hæmostasis should be applied to all the extremities before the knife is used. If this precaution is adopted, syncope will take place much sooner than it would do without it; but the surgeon will have the assurance that his patient faints, not from the quantity of blood lost, but mainly on account of its withdrawal to the extremities, where he can permit it to stay until the operation is over and the bleeding vessels secured. It seems to me, that this plan must render many operations easy, which without it, would be involved in difficulty. Loss of blood in the different steps of operations is often the great source of apprehension to the patient, and of perplexity and embarrassment to the surgeon; and, I believe, that the careful adoption of hæmostasis is calculated to disarm surgery of half the terrors which arise from hæmorrhage, during and after the performance of operations.

[Dr. Buckler brings forwards numerous cases to prove the value of these views in the treatment of disease. We will give a few of those which more particularly elucidate the subject.]

Case I.—S. Myers, aged 35, a negro man of middle stature, in the employ of Mr. B., having committed a debauch the night previous, and having been exposed to a storm on his way home, was taken on the following morning, with acute conjunctivitis of the left eye. His pulse was 100 in the minute; dryness, but no heat of skin, pain in the left temple, left eye closed, anorexia.—The conjunctiva excessively injected and very red, many of the larger vessels projecting above the level of the membrane, very little chemosis, and slight photophobia. I determined in this case to try what effect hæmostasis would have in blanching the eye; and, at the same time, to see how far it would control the flow of blood, after making a large orifice in one of the veins of the arm. The

venous circulation was then arrested in all the extremities, by means of ligatures firmly applied as closely to the trunk as possible. On the lower extremities handkerchiefs were used as field-tourniquets; this was necessary on account of the great muscular development of the thighs, which would have rendered a simple tying of the handkerchiefs, entirely ineffieient.—These ties were applied so firmly as to arrest, at first, the circulation of the arteries; but on directing him to flex rapidly the arms and legs, the arterial pulsations were felt at the wrists and ankles, and the veins were soon gorged to their fullest with blood. He complained at first of feeling sick at his stomach and light headed, but did not faint. The conjunctiva became considerably, but not entirely blanched.

The next thing was, to ascertain how far hæmostasis would control the loss of blood. A free orifice was therefore made in the largest vein of one arm, with a quick dash of a sharp thumb-lancet. The veins were emptied by a single gush of blood, to the extent of an ounce and a half; the blood then flowed slowly for 30 seconds, the pulse grew extremely weak, and the man fainted. The quantity of blood lost was between three and four ounces. The conjunctiva was still more blanched, but not as pale as the other eye. The bandages were removed and the man being laid flat on his back soon recovered. The arm was now tied up again and blood drawn, I should think to twenty ounces, without producing syncope. I then twisted the hankerchiefs, by means of small sticks run through the ends of them, until the venous circulation of each thigh was again arrested, and so soon as this was accomplished, the patient fainted a second time.—This man had been repeatedly bled, so that the syncope, which first occurred, could not be accounted for by any dread of the operation, and the quantity of blood lost was wholly insufficient to account for his fainting; more especially when after the bandages were removed, he lost nearly 20 ounces of blood, without any appearance of syncope; so far from it, this state did not come on a second time until the bandages were again tightened. It is fair to conclude, then, that syncope was produced in both instances, not from the direct loss of blood, but mainly by the accumulation of it in the extremities; the central circulation having been in manner depleted and the due supply of fluid to the brain cut off. The conjunctiva recovered in a few days under the use of a mild collyrium.

Case II.—A. Murray, a stout negro man, aged 28, about five feet seven inches tall, and who appeared to be in perfect health at the time, came to my office and requested to be bled. This seemed to afford a fair opportunity to test how far hæmostasis would control the loss of blood. His pulse having been slightly accelerated by walking, he was permitted to sit quietly for a short time, before the trial commenced. After resting, his pulse was 75, soft and open, and the temperature of the skin was natural. Assisted by a friend I tied all his extremities as closely to the body as I could, so as effectually to control the venous circulation. So soon as the veins,

which were of medium development, became distended, he complained of tingling in his arms and legs, the skin grew gradually moist, and in ten minutes after the application of the ties the most profuse diaphoresis came on. The pulse, which had grown gradually more frequent and soft, was now 85 beats in the minute and far more compressible than it was before the application of the ties: he complained of feeling giddy and light-headed. Symptoms twenty minutes after the application of the ties: pulse the same, skin bathed in the most profuse sweats, respiration less frequent and occasionally an inspiration more prolonged than the rest. A large orifice was made in the median basilic vein of the left arm. The superficial veins which had been very much gorged were emptied in an instant. The blood then flowed freely for a minute to the extent of three ounces, when it stopped, owing to the pressure of the bandage above, on the now more enfeebled circulation in the brachial artery. The bandage was slightly loosened, so as to allow the circulation of the artery to go on again, when about two ounces more were lost: and the man fainted. The bands about the limbs were now loosened and the patient placed in a perfectly recumbent posture. He rallied completely in the course of 20 minutes, during which time, it became necessary to close the orifice in the vein. I then took between 10 and 12 ounces of blood from the arm, the patient sitting up in a chair at the time, without producing syncope. After closing the orifice in the arm, the bands on all the extremities were tightened; the most complete syncope was induced. The bandages were now taken off and in a short time he recovered his strength.

Case III.—Edward Blake, mulatto labourer, æt. 24, a man of good muscular development, and over six feet in height, had a chill while at work, and next day sent for me to see him. He complained of headache, slight cough and pain in the back, a slight catarrh, white tongue, some heat of skin, pulse 90 in a minute, full and hard, Directed him to sit up in bed, and then tied handkerchiefs about the upper part of each arm and leg. The veins of his extremities, which were unusually large and very abundant, became excessively distended with blood. In three minutes after the last tie was fastened, he gave a slight hiccough, made an effort to vomit, and fell back in a complete state of syncope; in which condition he remained for fifteen minutes, being perfectly unconscious the whole time; I then loosened all the knots. The first evidence of recovery was a slight convulsion, which seemed to affect his whole muscular system, as if an electric shock had been passed from his head to his feet.—This I attribute to the first jet of blood sent to the capillary vessels of the brain, which had been emptied during the state of syncope. He next took a deep sigh, then opened his eyes as if from sleep, and in a short time he recovered from the faintness entirely. He was then directed to sit up in bed for the purpose of being bled. He said: "I'd rather be bled twenty times than have *them* things put on agin. They makes me feel *wus* than I likes to feel." I tied up the right arm and took from him fifteen ounces of blood, which produced slight faintness, causing him to lie down. I next arrested

the flow of blood by putting a bandage upon his arm, and when the sickness had entirely passed off, tightened the handkerchiefs about his thighs. Two minutes after this was done he fainted again, being in a perfectly recumbent posture at the time. The syncope was complete,—the man seeming to be in a perfect state of supended animation for the space of ten minutes, when the ties were loosened. The first evidence of animation came on in a few minutes, with the same convulsive twitch in all the muscles, as was before observed. He then took a few deep inspirations, and asked for some water; the instinct of the stomach being aroused to supply the want of fluid occasioned by the previous loss of blood.

Hæmostasis in Engorgement of Parenchymatous Organs.

Case VIII.—C. P., a negro chambermaid aged 23, of robust frame and tall stature, whose parents are living and in good health; never remembers to have been sick until now. Having been the night previous to her attack in a hot, close, and crowded room, she came home without sufficient clothing, through a damp and cold atmosphere. The next morning she was taken with a chill, which she says was an icy coldness over the whole body, without shivering. It lasted most of the day and was succeeded at night by aching and soreness in all her limbs, violent pain in the back and severe headach.

24th. The day after her chill, I saw her for the first time: pulse 80, soft and natural, feet and hands cool, more heat about the head and neck than natural, skin dry, tongue moist, respiration a little hurried, and much thirst, which when indulged by taking cold water, gives rise to a chilly sensation. She complains of great weakness, violent headach on making the least exertion, and universal soreness of the limbs. She has slight cough and no expectoration. The respiration on the right side slightly puerile, and on the left shrillness and sharpness of bronchial respiration, as if the air was passing through metallic tubes, loudness and increased expansion of the vesicular murmur in the lower third of the lung. Took blood to 15 ℥ more or less, and ordered a purgative.

25th. Has had no sleep, less soreness in the muscles, great prostration, headach, increased heat of skin, hands and feet hot and dry, tongue frosted, expectoration viscid, frothy, the colour of tobacco-juice, and slightly streaked with blood. Applying the ear revealed the fine crepitation of pneumonia occupying the lower third of the left lung, slight bronchophony, and bronchial respiration. Took 12 ℥ of blood, the patient being in a perfectly recumbent posture at the time, and ordered tart. antim. et potass. iv. grs., gum acacia ℈ j., water ℥ j., of this from twenty to forty drops every two hours according to the degree of sickness it occasions.

26th. Has slept none, tongue white and dry, pulse 120 and corded, expression of countenance bad, looking sodden, with dulness about the eyes, the blood drawn yesterday is very much buffed, the fibrinous coating being about a line and a half in thickness on a clot of blood about an inch in depth, great precipitation of red globules and the ordinary quantity of serum. The bowl had been kept in a

cool room. No vesicular murmur is heard over the lower third of the left lung, over which region there is great dulness of sound under percussion; the fine crisp crepitation of pneumonia is heard as high as the spine of the scapula, marked bronchial respiration and bronchophony; respiration puerile on the right side. She has slight dyspnœa, and complains of great weakness after sitting up. Took 10ʒ of blood, more or less, from the arm, ordered the dose of antimony to be increased, and a powder containing sub. mur. hydr. and ipecacuan. ää ij. grs. to be given every four hours.

27th. She has slept none, expression of face exceedingly anxious, complete dulness over the lower half of the left lung behind, fine crepitation at every other part of it except at a point directly beneath the clavicle: bronchophony and bronchial respiration very marked; the last blood taken is highly buffed. Medicine to be continued.

28th. More dulness on the left side, a course rhonchus and absence of vesicular murmur over the lower half of the lung; patient too weak to sit up in bed. The general appearances of the case indicate a fatal result. Ordered the medicine to be continued, and ligatures to be applied to the upper part of each thigh.—As soon as the ties are fastened, the patient complains of feeling weak, and sick at her stomach, the skin about the head and trunk is very much relaxed, and the pulse much softer and less frequent. One hour after the ties were put on, she complained of a painful sense of numbness in both her legs, the vessels of which were very much gorged with blood. Directed the ligatures to be kept on, all medicine to be discontinued, and the barley-water to be given in small quantities.

29th. The ties had been kept on for twelve hours, when removed, the patient had slept for three hours, the first time since she went to bed: the pulse is soft, 100 in the minute; tongue moist, skin soft and open, expression of countenance cheerful, eye more brilliant, expresses herself as feeling much better; the upper half of the left lung is free from the fine crepitation which was so distinct yesterday, less bronchial respiration; a subcrepitant râle and an occasional rhonchus is heard in the upper half of the lung. Ordered the bandages to be applied a second time and to be kept on until they became painful.

30th. She is much better, has more cough than she has had at any time, expectoration more copious: at the upper part of the lower half of the lung, which yesterday indicated the second stage of pneumonia, a moist subcrepitant râle is heard.

1st. The bandage had been kept on fourteen hours, producing slight œdema of the lower extremities, below the point at which they were tied. There is much less dulness over the upper portion of the lower third of the lung behind, at which point a soft mucous râle is heard. Ordered the drinks to be given in moderation and saw that the handkerchiefs were firmly tied.

2d. No dulness except at the very base of the lung above which point a soft subcrepitant rale and an occasional rhonchus are distinctly heard; the tubar sound is feeble and there is much less resonance of the voice. Directed that the handkerchiefs should be re-applied.

3d. Hæmostasis to the lower extremities does not produce the symptoms of syncope which it occasioned when applied the first time; it serves, however, to depress the pulse and keep the skin relaxed. She slept well all night and expectorated about a gill of mucus on waking; subcrepitant rale is heard at the very base of the lung, and an occasional rhonchus when she takes a deep inspiration. Ordered the ties to be applied at intervals.

5th. She is perfectly convalescent.

It was stated in the beginning of this article, that the effects of hæmostasis are always in a direct ratio to the quantity of the circulating fluid, and the correctness of this position was explained by reference to a simple physical example: in confirmation of its truth, the reader's attention is now called to cases I. and II. These were selected for illustration, because we thought they would furnish the reader a more accurate and familiar idea of the exact amount of blood lost, and of the conditions under which it was taken, than any other analogous cases could have afforded. In both instances the individuals were of middle stature, with veins of medium development, had a normal quantity of blood in the circulation at the time the trials were made, and neither of them fainted from the direct effect of hæmostasis, when first applied to all the extremities: when however a certain quantity of blood, varying in the two instances, had been drawn, by which the central circulation was deprived of a very small quantity of blood, syncope came on. After the ties were removed, one of these individuals lost a considerable amount of blood without the occurrence of syncope; the other fainted, but not until many ounces of fluid had been withdrawn. And when the ties were again applied, both of them fainted outright. It being established then, that the effects of hæmostasis are in every instance dependant on the quantity of fluid in the circulation, attention is now called to two other conditions, which must modify its influence in producing syncope.

1st. The length of the extremities.

2d. The size of the veins of the peripheral or extreme circulation.

The height of the body depends generally, not upon the length of the trunk, but on that of the extremities; while therefore the central circulation in every individual remains nearly the same, the extent of the extreme vessels is constantly varying: consequently, in one individual the capacity of the veins of the extremities must be small, and in another large in proportion to that of the trunk, and the effects of applying ties must be correspondingly greater or less. When venesection has to be performed, it not unfrequently happens, that the veins of the extremities are so small, that great trouble is often required to find one of sufficient size from which to let blood. While on the other hand the extreme veins are sometimes found enormously developed. The quantity of blood which can be transferred from the central circulation, must of course depend on the size of the extreme vessels and the amount of fluid they are capable of holding. For example, in case III., the indi-

vidual was over six feet in height, the veins were larger and more developed than usual, and the circulation appeared to have the degree of repletion which belongs to health. In this instance, syncope was induced from the direct effect of the ties, and without the previous loss of a single drop of blood.—The result here, was doubtless owing to the length of the limbs and the unusual development of the extreme veins.

Preparatory to exeising a seirrhous mamma, ties were firmly applied to all the extremities, which reduced the pulse to a mere thread. The operation was then commenced by making two elliptical incisions, extending from the upper part of the third to the sixth rib; from these about an ounce of blood trickled down the walls of the chest and was caught in a sponge. In the course of the operation, which lasted about ten minutes, I found it necessary to sacrifice a large portion of the pectoralis major, and when the knife was laid aside, the fourth rib was bare to the extent of an inch and a half. No blood was lost during the course of the operation, except that which flowed from the two first incisions. The ties on the extremities were now loosened for the purpose of finding the divided vessels, and in a little while a jet of blood was found to issue from two of the principal arteries, about which ligatures were quickly put. Torsion was applied to the smaller branches, and the capillary oozing stopped by the use of an astringent. In this operation the chief ramifications of the external and internal mammary arteries were divided and the quantity of blood lost, could not in all have exceeded two ounces. We have often applied ligatures to check hæmoptysis and epistaxis, and in every instance with success, but as these hæmorrhages are likely to stop at any time without interference, we considered these trials as unfair tests of the effects of hæmostasis and unworthy of special notice.

In case VIII. it is observed, that the effects of arresting the venous circulation were much more marked at first, than they proved to be from subsequent applications of the ties. This was doubtless owing to the fact that at first, hæmostasis was adopted soon after the loss of blood from the arm, at which time, the vessels were more empty than they were at subsequent trials, the circulation having been in the interval replenished by drinks. In every instance therefore, in which it is desirable to produce the full effects of hæmostasis, fluids should be sparingly given to the patients.

From the physiological changes which were observed to take place, from arresting the venous circulation in other cases, it is fair to conclude, that the use of the ligatures contributed largely in cutting short morbid action, and in bringing about a state of convalescence.

In case VIII., the withdrawal of blood to the extremities, was practised at a time, when the condition of the patient was of the gravest character, and when perfect toleration to the action of antimony was established. Most writers agree that the beneficial effects of blood-letting in acute disease, are mainly attributable, not so much to the quantity of blood drawn, as to the syncope which the

loss of it induces.—The correctness of this opinion, no one can doubt, who has witnessed the disgorging of the vessels of a recently inflamed part, in consequence of induced syncope from loss of blood: notwithstanding the opinion of Bouillaud and others to the contrary.

During the short period of syncope which succeeds venesection, the vessels of a recently inflamed part may (the force with which the blood is sent to them being cut off) resume their natural calibre; but when the inflammation has existed for a greater length of time, so as to disable the capillaries. and these have laboured under protracted engorgement, by which the inherent vital contractility of their coats is weakened, the ordinary duration of syncope is insufficient to enable them to gather up and disgorge the abnormal quantity of contained blood. And besides this, if the engorgement have lasted long enough, the thinner portions of the blood are transfused into the interstitial tissue and other changes take place. In this state of inflammation, how incalculable must be the importance of a means, which will protract syncope indefinitely, so that the afflux of blood may be cut off, further injection of the vessels prevented, and time given for the transfused fluids to be absorbed. And this too, in whatever part of the body the inflammation may be seated. In a case of acute articular rheumatism of the left elbow, for which the patient had been twice bled with little benefit, hæmostasis was applied to the arm of the opposite side, and to the two lower extremities, with great relief of pain and mitigation of the general symptoms. It is fair at least to infer, that in these cases hæmostasis contributed largely to the removal of the engorgement, and to the final recovery of the patients.

In another case, simple venous congestion of the lungs was speedily relieved by the application of ligatures. When blood is accumulated in the veins of the brain or lungs, hæmostasis promises well, but as a means of removing congestions generally, its application is not likely to prove universal, and for obvious reasons. When hæmostasis is applied, the blood which accumulates in the extremities is derived of course through the arteries. If there be a morbid collection of fluid in the veins of the lungs, it has only to pass to the left side of the heart, and then to a point beyond the ligatures, where it will be retained. But if on the contrary, an abnormal quantity of blood should exist in the vena cava and its branches, or in the vena portarum, it would have to pass to the right side of the heart, then the round of the pulmonary circulation, afterwards to the left ventricle, and lastly to a point beyond the ligatures. And independently of this, if, in congestion of the veins of the abdomen, ties were applied to the thighs, they would at once, as before explained, arrest half of that force which returns the blood through the vena cava back to the heart, and would consequently increase instead of diminish the stagnation of blood in the veins of the trunk. Detaining the blood in the extremities, anticipating a chill, by means of ligatures, and thereby preventing its accumulation in the spleen and portal vessels, may possibly delay a paroxysm of intermittent: but when blood has already accumulated in the

large veins of the abdomen, the adoption of hæmostasis would only augment the congestion.

It was stated in the commencement of this article, that pressure applied over the jugular veins will delay, and in some instances prevent syncope. Dr. Parry recommended compression of the carotids for the relief of nervous diseases. This suggestion appears to have excited at the time great attention.—I quote the language of Dr. Pring in regard to it—"More then thirty years ago, the attention of Dr. Parry was, I believe, first particularly directed to the importance of the circulation, by a case of hysteria, in which from an obvious determination of blood to the brain, he was induced to try the effect of pressure on the carotids, with a view of diminishing the quantity of blood sent to this viscus. The symptoms were diminished, or suspended during the compression of the carotids, and repeated subsequent experiments of the same kind led to the conclusion, that the cause of spasmodic disease proceeding from disorder of the brain, consisted in a determination of blood to this part." Mention is again made of the suggestion in a letter to Dr. Parry from M. Baillie the author of the treatise on pathology. He says. "I saw Mrs. T. yesterday evening—I made the experiments which you had already tried. Upon compressing the carotid artery of the right side firmly, the involuntary motions of the fore-arm, arm, &c. were in a great measure checked, but were not at all affected by a similar pressure on the left carotid. This is certainly a strong proof of the truth of your opinion in this particular case." It is exceedingly difficult to compress a carotid so as to cut of its circulation, and this cannot be done, without first arresting the flow of blood in the veins which lie over it. Parry believed that all nervous diseases depended upon an afflux of blood to the brain, he indeed originated the doctrine of local determination, and blinded by this idea, it never occurred to him, that the relief derived might depend on compression of the veins, rather than the arteries of the neck. In a paroxysm of hysteria, congestion occurs in the lungs, giving rise to the distressing dyspnœa which so often accompanies an hysteric seizure, and the brain is deprived of its normal supply of blood. The relief which Dr. Parry and M. Baillie observed, was no doubt owing, not to the compression of the artery as they supposed, but to their having arrested the return-blood by the veins, by which means the normal quantity of circulating fluid was restored to the brain.

It is somewhat curious, that the means which are here proposed to induce syncope, should at one time have been used for the purpose of relieving it. An old and popular remedy for syncope, was to apply ligatures tightly around the limbs. The idea was that they impeded the flow of blood to the extremities. This practice has recently been alluded to by Mr. Wardrop, who countenances their employment, and endeavours to account for their influence on physiological principles.

My friend, Dr. Fonerden, ingeniously suggests that the object here desired, may be better accomplished, not by means of liga-

tures, but by bandaging the extremities continuously from the fingers and toes to the trunk, so as to drive the blood from the peripheral, or extreme, to the central-circulation. May not such a practice be adopted with advantage, where an individual has lost so much blood, that there is only enough left in his system to supply the organs essential to life—the heart, brain, and lungs—and to the extremities of anemic women in protracted labour, where, owing to the pressure of the womb on the iliac veins, *nature's hæmostasis*—so much blood is cut off from the central-circulation as to deprive the brain of its normal supply, and thus rendering the pains weak, feeble, and inefficient?

It has been stated in many Journals as a fact for which no explanation is offered, that raising the arm on the side from which the blood comes will arrest bleeding at the nose. That this may afford relief in mild cases, it is easy to conceive. When one arm is held perpendicularly upwards, the force of gravity accelerates the current of blood in the subclavian vein, which is now in a vertical direction; this rapid displacement of fluid, at the mouth of the jugulars, hurries the return-blood in them, and thus derives from the bleeding vessels of the nose.

Hæmostasis accomplishes what no other known remedy is capable of doing. It puts syncope under our control, both as to duration and degree. It is capable of exerting, under given conditions, a more powerful control over the circulation than the lancet, antimony, or digitalis, and controls the heart's action, without exhausting the vital forces, or giving rise to the ill consequences which the protracted use of most of the sedative agents is likely to do. And finally, hæmostasis, in the hands of judicious practitioners, must prove a means of saving an incalculable amount of human blood; to say nothing of the incredible benefits which would be derived from its adoption by those Sangrados of our art, who bleed empirically in all conditions, and who in many cases, like the fabled Vampire, suck the living current until the vital powers are spent.

Maryland Medical and Surgical Journal, March 1843, *p.* 265—309.

25.—NEURALGIA TREATED BY INDIAN HEMP.

By M. H. Lynch, M.D., &c.

[This was a case of neuralgia above and around the right orbit attended with agonizing pain of a "stabbing" character, which intermitted. A variety of treatment having previously failed, 45 drops of tincture of hemp resin (strength 3 grains to one drachm) were ordered to be taken each morning when the pain commenced.]

18th. The tincture has been regularly taken; it has made her feel "a little light in the head," and produced intense itching around the orbits, and over the body and extremities, especially the lower; the itchiness around the orbits is referred to numerous close set

points; elsewhere the points are distant; there is no eruption; the itchiness is very intense for several hours after taking the dose, but afterwards diminishes gradually, but is felt at distant points of the surface twenty hours after the administration of the medicine. During the two first days the neuralgia was singularly relieved after the medicine was taken; to-day, yesterday, and the day before, it has been altogether removed; dull headache, however, remains, such as she has long suffered from, and with it her dyspeptic symptoms. To discontinue all medicines.

21st. The neuralgic pain has not returned. To use laxatives and the following mixture:—

Sesquicarbonate of soda, half an ounce; Infusion of cascarilla, eleven ounces; Syrup of orange-peel, one ounce. Two tablespoonfuls four times a-day.

The dose of the hemp resin was very small in proportion to the effect produced on the pain; I was prepared to increase the dose to sixty or eighty drops before I could produce an impression on the disease. I should observe that the tincture was not made with resin brought from India, but with that prepared by Mr. Squire from the dried plant. Before I saw the case under consideration, I had administered the hemp resin in a few cases, but the itchiness (if any existed) escaped my notice. Since I observed the itchiness in B—— L——r, I administered several large doses (120 drops or six grains in each) to a gentleman aged sixty-four, of very robust make, but not corpulent. He had recently been under my care for a urinary affection, from which he had recovered, and having heard of the gunjah, out of curiosity requested to have some. 120 drops of my tincture produced heat of the skin, considerable exhilaration, with itchiness at the roots of the eyelashes and in a few points of the lower extremities and scrotum. There was no sexual excitement; he felt drowsy after the expiration of three hours, but being amongst cheerful friends, easily resisted the inclination to sleep. In him the itchiness was so moderate that he only named it in reply to my question. This gentleman smoked daily half a dozen cigars at least. I think decided tobacco smokers bear a larger dose of the hemp than others. The hemp does not produce constipation.

Provincial Medical and Surgical Journal, April 1, 1843, *p.* 9.

26.—ON STAMMERING.

By Dr. Abercrombie, Edinburgh.

At a meeting of the Medico-Chirurgical Society of Edinburgh, Jan. 4, 1843, Dr. Abercrombie communicated "Observations on the Impediment of Speech, commonly called Stammering." When Dr. Abercrombie's attention was first directed to the subject, the following facts attracted his notice:—

I. He observed that stammerers never stammer in singing.

II. The individual on whom his first observations were made, did not stammer when he was obliged to speak in a louder tone of voice

than usual, as when conversing in the midst of a noisy crowd, or in a carriage on a rough road.

III. The precentor of a church came under his notice who stammered in common conversation, but showed no hesitation when reading out the line, as it is called, which was done in a peculiar high-pitched tone of voice, such as is usually employed by precentors for that purpose.

IV. He found that stammerers have no difficulty in performing any of those movements of the lips and tongue, by means of which the consonant sounds are produced, when they are directed to make these movements simply—that is, without any reference to speech.

V. He observed that in some stammerers the difficulty is not confined to the consonant sounds in which the peculiar action of the organs of speech is more directly exerted, but extends to other sounds, in which these organs are little, if at all, concerned, such as the simple aspirated *h*, as in the words *happiness*, *holiness*, &c. In one individual, indeed, who was treated successfully, he found that he often hesitated at such words as these, long after he had overcome every difficulty respecting the consonants.

By such facts as these he was led to the conjecture that the affection does not depend upon any defect in the organs of speech, properly so called; but is rather connected with a deficiency in the management of the voice, and he thought it would be found that, when a stammerer gets into that peculiar state of hesitation which is familiar to every one who has witnessed it, he is endeavouring to speak when he has no voice—that is, when the lungs have become emptied of air, or nearly so.

According to these views, the principles on which the affection may be accomplished appeared to be the following:—In actually accomplishing a cure, everything depends upon the perseverance of the patient himself after the principles have been explained to him.

I. To direct the attention of the individual to the three distinct parts of which the function of speech consists—viz.

1. A full and continuous current of air proceeding outwards from the lungs.

2. The formation of this into articulate sound, or voice, by the action of the larynx.

3. The formation of this into articulate sound, or speech, chiefly by certain movements of the lips and the tongue.

He soon perceives that he has no difficulty in performing any of these actions, when they are thus made separate objects of attention; and in this manner he is led to understand that his affection does not depend upon any defect in any of the organs of speech, or a difficulty of performing any of the processes of which the function consists; but in a certain want of harmony among these processes which has grown into a habit. He is easily made to perceive, for example, that he has no difficulty in performing that motion of the lips by which is formed the sound of the letter *b*, then why should he have any difficulty in saying *bee*, *boy*, *bell*, &c. When the formation of each letter is thus made a separate object of attention, or

a distinct voluntary act, it is remarkable to observe how the difficulty seems to vanish; and, by continued attention in this manner, the habit is gradually broken, in as far as concerns this part of the process.

II. The second, and principal part of the treatment is, to exercise the individual in the habit of never attempting to speak without having A FULL AND STRONG CURRENT OF VOICE. He may be made sensible of this by making him read in a strong, loud tone of voice, as if he were calling to a person at a distance, or in a tone resembling singing or chanting, or in the peculiar tone of a precentor, in reading out the line, which has been already referred to. When he has thus been made to understand the principles on which the removal of the affection is to be conducted, the farther treatment consists in a course of exercises calculated to give him a full command of his voice, and so to correct the habit which he has acquired, of speaking, or attempting to speak, without sufficient voice. For this purpose he should be made to read aloud several times a-day, from an author whose style is somewhat declamatory. In doing so, he should be made to read in a high-pitched tone, and to stop frequently and take a full breath, so as to have the voice thrown out with a force beyond what is required for ordinary reading or ordinary conversation. With this view it is necessary to make him stop and take a full inspiration much more frequently than would be required by another person; for it is in this part of the process that we are to trace, in a great measure, the bad habit which he has acquired, and the opposite habit which he is required to cultivate. In particular, whenever he feels the tendency to hesitate at a word, he is to be taught to stop instantly, take a full breath, and then try it again. He will be immediately sensible of the effect; and a succession of voluntary efforts of this kind will be gradually formed into a habit, calculated to correct the injurious habit, in which, I believe, we are chiefly to trace the pathology of stammering.

In a note appended to this paper, Dr. Abercombie remarked that, since his observations were written, he had found that the same principle respecting the influence of respiration in this affection had been pointed out by Dr. M'Cormack, of Belfast, in a small volume published in 1828.—*Edin. Monthly Journal.*

Ibid, March 4, 1843, *p.* 455.

27.—TREATMENT OF BRONCHITIS.

By Dr. C. J. B. Williams, F.R.S., &c. &c.

In the sthenic form, where there is a hard, full pulse, with heat of skin, there is no doubt of the propriety of using the great remedy for inflammation—that is, blood-letting, both general and local; but it is not to be used extensively, for the patient does not bear the loss of a large quantity of blood. Moderate bleedings give relief,

but it is not permanent. Small blood-lettings from the arms, and cupping between the shoulders, are necessary. We must, in fact, rather consider that the true termination of this inflammation is by expectoration, as this is the natural mode in which the vessels relieve themselves. And it is very rare that we can stop this termination by any kind of blood-letting. The remedy most useful, and perhaps, even above blood-letting, because it is more safe, is tartarised antimony, given in doses of from a quarter of a grain to half, or even a whole grain, every three or four hours, in combination with hydrocyanic acid, to prevent the cough, or digitalis, if the pulse is very frequent and hard, or colchicum, if the urine is particularly scanty; and generally combined with narcotics, to quiet the severity of the cough. It is not advisable to give narcotics in the first stage. The effect of opium is to check the expectoration and increase the pulmonary congestion. You must not, therefore, combine opium with tartar emetic, as an expectorant. Opium should be given with belladonna and stramonium. It may be given in combination with calomel—in the sthenic as well as the asthenic form, where the stomach is too irritable to bear antimony, and where there is great tenderness at the epigastrium, and some signs of fulness, a very much loaded tongue, and disordered evacuations. Here calomel or mercury, together with small doses of opium, are often highly useful. Blisters are not suited to the sthenic state of bronchitis, where the heat of skin continues, and the pulse is very strong and hard; but even in this stage some forms of irritation may be useful. I have seen tartar emetic in this case, rubbed over the surface of the chest, produce a copious pustulation, affording more decided relief than blisters. The mode of doing this I have before mentioned. After rubbing in the tartar-emetic with a piece of flannel, place a bit of flannel, soaked in the solution, on the chest; then place a piece of mackintosh cloth over it: this has the effect of keeping up an action like a warm poultice. This is actually an irritating poultice, and causes pustules in great quantity. This may be used where the strength is too low to bleed, and where you do not like to apply blisters, which often increase the fever, until the blisters rise.—But when the inflammation has given way, in some degree, when the pulse has lost its hardness, and the skin has lost its heat, and something like lividity begins to appear; when the expectoration becomes somewhat opaque, then blisters may be used freely, and give most effectual and permanent relief. Small blisters often cause quite as much irritation as large ones, but they do not produce that effectual discharge on which the great efficacy of the blister depends. In this case too, as the acute stage begins to decline, and the symptoms become more asthenic, then it is of great consequence to give remedies to promote the act of expectoration. The remedies most useful are salts and senna, citrate of ammonia, and where there is great difficulty in the expectoration, carbonate of ammonia and squill, and various other means to keep up the strength. It becomes sometimes necessary to give not only carbonate of ammonia and æther, and other stimulants, but where the patient is gasping for breath you must give brandy

and wine to keep the patient alive. The good effects of this treatment are generally manifest in the general symptoms before they become perceptible in the physical signs. The pulse becomes firmer and the countenance improves, becoming less livid, the breathing less laborious, and the expectoration more easily thrown off; after a time the improvement is indicated by the physical signs. The greatest care should be observed in the employment of the antiphlogistic treatment in the asthenic form of bronchitis: cupping, or a few leeches, or blisters, instead of drawing blood, may be used in the early stage. Tartarised antimony, too, may be given with some stimulant expectorants—salts of ammonia and others. Opium may be more freely used in the asthenic form of bronchitis. Sometimes æther and hot brandy and water are necessary to enable the patient to expectorate, and in young children mercurial purgatives and emetics are of great use.

Chronic inflammation of the air passages may arise from the acute disease. At the latter stage the fever subsides or becomes much diminished; the pulse loses a good deal of its hardness, yet it continues frequent, and the expectoration continues, but it has greater opacity. This catarrhal inflammation also affects the nasal passages, and sometimes there is permanent chronic inflammation in them accompanied by purulent discharges, and sometimes ulceration, even affecting the bones of the nose; and sometimes too it is connected with exanthematous vesicular inflammation affecting the lining of the nose. A bad odour seems to arise from the action of the air on the secretion in chronic bronchitis. Chronic bronchitis is not at all uncommon in the slight form, and it often arises from imperfectly cured acute bronchitis. Bronchitis may continue—when not treated as it ought to be—and end in the severe kind.

It frequently happens, that where persons are affected with bronchitis they let it go on, and, neglecting the treatment, they expose themselves to cold and drink intoxicating liquors, which has the effect of keeping up the chronic form. Coachmen, coach-porters, and others, are often labouring under bronchitis, kept up by continual exposure to cold and their habits of excess. I need not dwell long upon the symptoms of this disease. The fever is very slight, perhaps only a little at night, and the cough comes on more in paroxysms or less constant. Generally the expectoration is of a compound character, consisting of round masses of an opaque colour, sometimes purulent with little shreds of solid matter, and often liquid in it. When the expectoration is copious and purulent, as it sometimes is in bronchitis, particularly in that supervening after exanthematous or eruptive and hectic fevers, it is necessary to resort to physical signs; you find the absence of tubercles, and you find the various catarrhal rhonchi shifting and changing about from part to part, not permanently fixed in any one spot. The emaciation is generally less in hectic fever than in phthisis.

In all cases where there are expectorations and the general symptoms I have been describing, you always find some signs of disease in the texture of the lung, either manifested by dullness or impeded

respiration; and, as I have before told you, there may be, as the causes of bronchitis, emphysema of the lung or organic diseases of the heart.

A very formidable kind of common bronchitis is often induced by habitually inhaling dust from the air, to which many persons are exposed in certain occupations. The lining of the tubes becomes thereby very much inflamed. There is ulceration in chronic bronchitis, accompanied by organic disease of the bronchi. Chronic bronchitis is often induced by habitually taking in poisonous dust, and it frequently occurs among needle-pointers, stone-cutters, and others who are continually breathing in irritating matters with the common air. In these cases, the disease comes on gradually increasing, and dyspnœa and cough follow. Sometimes there is purulent albuminous expectoration, with little shreds of lymph in it. Sometimes this disease extends to the structure of the lungs themselves, causing consolidation of the lung, and if this is extensive, as it sometimes is, it terminates, in some cases, in consumption. Chronic bronchitis, in young persons, may follow measles, small-pox, and scarlatina, and this is a more serious form of disease, because the inflammation is here more intense.

The morbid anatomy of bronchitis presents more varieties in colour than anything else; and in very rare cases there are ulcerations. The prognosis of chronic bronchitis depends on the amount of disease, and its complication with other diseases.' In simple chronic bronchitis, blood-letting is often necessary where the patient is plethoric. Local blood-letting, cupping between the shoulders, or the application of a few leeches to the top of the sternum, is often enough.

The chief remedies used, are, external counter-irritation, combined with remedies to improve the state of the constitution. A succession of blisters applied to the chest is often useful, where the expectoration is excessive, and of a somewhat purulent character, and without fever; it is sometimes also useful to employ mineral acids, and in these cases it is often found that the inhalation of iodine vapour is useful. In most cases it is proper to use purgatives and expectorants. Narcotics may be given from time to time. It is of great consequence, in chronic cases, to attend to the general state of the functions, and if there is anything like gastro-enteric disorder, to give small doses of mercury to conduce to the proper action of the liver and keep the bowels open; and to remove any gouty tendency that often occurs in combination with chronic bronchitis, one of the best remedies is colchicum. It is important to observe carefully the diet: generally speaking, it should be simple, but not too starving; mild, farinaceous food, and a little of the lighter kind of animal food, seems best. It is useful to avoid stimulating liquors, and to avoid other sources of irritation, and also extreme heat and cold—taking care not to allow the patient to be exposed at night, or to the east winds.

Medical Times, April 22, 1843, *p.* 54.

28.—FURTHER REMARKS ON THE IODURET OF SILVER.

By Charles Patterson, M.D., Physician to the Rathkeale Infirmary and Fever Hospital, &c.

[In Retrospect, Vol. VI, p. 1, we noticed an interesting paper by Dr. Patterson, on the effects of Ioduret of Silver in different affections of the stomach, &c. Dr. Patterson has since been convinced of its decided efficacy in *hooping cough*, the following case of which he relates.]

A clergyman residing in Rathkeale had eight children almost simultaneously attacked with hooping cough. Their several ages varied from one to ten years. In none was the disease complicated with any serious degree of bronchitis; but in all, the fits of coughing were continually recurring with very brief intervals. In fact, the moment one child began to cough, the whole, from imitative sympathy, immediately became seized with a paroxysm; and there being so many of them made the attacks so frequent as to render their state most pitiable. In some the attacks were attended with very distressing fits of sneezing, either preceding or alternating with the cough. Three or four had frequent attacks of epistaxis; some had more or less vomiting; and in two the spasms were so violent as to cause extensive effusion of blood into the subconjunctival tissue in both eyes. It was observed that there were three or four of the children in whom the disease was much more severe than in the others. It was with one or other of the former that the paroxysms generally commenced, and then extended to all.

The disease had subsisted unabated for about a fortnight, when, having selected the four children in whom it was most severe, for treatment with the ioduret of silver, I gave the father a supply of pills; those for the younger contained the eighth of a grain, and those for the elder a quarter of a grain in each. The quantity of pills was calculated to answer for about a week, one to be given three times a day. I also, for the purpose of being enabled to form a comparative estimate of the efficacy of the ioduret, at the same time prescribed a combination of ipecacuan and antimonial wines for the other children, who were less severely affected. When I called in four days afterwards I found *all* the children greatly relieved. The paroxysms were much less frequent, and were greatly abated in severity. But I was surprised to learn that all the pills were used, until the father explained that perceiving the great amendment which almost immediately took place in the poor little patients who were taking the ioduret of silver, while there was no sign of amendment in the others, he had been for two days, of his own accord, giving the pills to all. The ioduret of silver was then continued with all the children for about ten days more, at the end of which time, the *hooping cough*, with all its symptoms and effects, had entirely disappeared, except that a slight, occasional, catarrhal cough remained for a few days; but it, however, subsided without any medical treatment.

I have continued to employ the iodurct of silver also with considerable success in all those other complaints, of which cases have been adducced in my former paper. But in epilepsy its effects have been least satisfactory. In one case of that disease, given to the extent of two grains three times a day, it protracted the intervals of the fits from one week to three weeks; and, after a course of two months, having been laid aside for oxide of zinc, the paroxysms again recurred weekly. I have also given it in other diseases. In two cases of protracted leucorrhœa, in combination with alum lotion; in a case of supraorbital remittent neuralgia, in a lad about sixteen years of age; in periodical colic, an affection to which the Irish peasantry are very liable; and in several cases of painful hysterical affections it has been most beneficial.

I have at present under my care a young lady who has been suffering for the last three years under painful and scanty menstruation. Immediately before, and during the first two days of the menstrual accession, her sufferings were usually most acute. In her case various modes of treatment had been employed, but without material benefit. At length, about three months ago, she commenced to take the ioduret of silver. Since then she has had three monthly periods, and in each the diminution of pain and increase of the catamenia have been most marked and progressive, insomuch so, that during the last accession, which occurred about a week back, she only complained of slight pain at the commencement. She takes the iodurct of silver in half grain doses, increased to two grains twice a day, during the ten or twelve days previous to the expected return of the menses; and as soon as she perceives the accession of the discharge, and while it continues, she takes the ioduret three times a day; but as soon as it declines she omits the medicine altogether for a fortnight. The greatest improvement has taken place in her general health and appearance.

But it is not to be expected that the ioduret of silver is what the nitrate is not—that is a sovereign remedy in every case in which it may appear to be indicated. For instance, I have been giving it with very little benefit to a man who has been greviously afflicted with frequent pain in his stomach, and vomiting of intensely acid fluid, and who is relieved only by prepared chalk, which, when taken for a few days, affords considerable intervals of ease. Sometimes, after taking the chalk, he immediately discharges his stomach, the effect of the sudden extrication of gas, when the matter vomited appears in a state of brisk effervescence.

The oxide of silver has been lately proposed by Mr. Lane as a substitute for the nitrate, with the view of preventing the discolouration of the skin. I do not doubt that as a medicinal agent the oxide is equally effective in some instances as the nitrate; but I think there can be no doubt that the long continued use of the one is just as capable of producing cutaneous discolouration as that of the other. It has been shown that when nitrate of silver is internally administered, it is in the stomach converted into the chloride

by the muriatic acid which it meets in that organ:* consequently it is the chloride of silver that, absorbed into the circulation, is conveyed to the cutaneous capillaries, and there suffers that transformation which causes the discolouration. Now, there can be no doubt that the oxide of silver is in like manner converted into the chloride when internally exhibited. Of this any person may easily satisfy himself by adding a little *liquor potassæ* to a solution of nitrate of silver, washing the precipitated snuff-brown oxide by decantation, and then pouring on it some distilled water containing a small portion of muriatic acid, when its brown colour will be seen immediately to change to a pure white, showing its conversion into chloride, which on exposure to light will assume the characteristic leaden tint.

It may be deemed superfluous to adduce any experiment in proof of the displacement of oxygen by chlorine—a fact which is so generally known. But Mr. Lane says that from experiments he has made, but which he neglects to describe, he does not anticipate such a result in the case of oxide of silver. Now on that point, which he very cursorily despatches, and respecting which he is so greatly mistaken, depends the whole value of his views and suggestions regarding the advantages he supposes to be possessed by the oxide.

Dublin Medical Press, April 19, 1843, *p.* 248.

29.—*Removal of Discoloration of the Skin produced by Nitrate of Silver.* By Henry Graham, M.D. [Seeing Dr. Patterson's interesting paper on nitrate of silver in the Dublin Medical Press, for August 24, 1842, (and abridged in Retrospect VI, p. 1,) Dr. Graham states, that three or four years ago being engaged in some photographic experiments, he observed the effect of the hydriodate of potass in discharging the colour from paper which had been covered with the nitrate or phosphate of silver, and darkened by exposure to light, and resolved to try its effects on the human subject in cases of discoloration of the skin, produced by the long continued use of the nitrate of silver. He says:]

I first used the hydriodate of potass, rubbed up with tinct. sapon. as an external application. This was well rubbed into the skin of the face night and morning, and the patient directed to expose himself as much as possible to the action of the solar light. It was then used in combination with the unguent. hydrarg. and afterwards in the form of a strong solution in water. It was also given internally to a considerable extent. (In this case the internal use of nitric acid had been persevered in for some time, at a former period, by the direction of one of the Professors in the University here, but without any effect.)

From the time above mentioned up to this date, the external use of the hydriodate of potass has been continued, especially during

* See Retrospect, vol. VI., Art. 1.

the summer season, when the action of the sun's light is most favourable, and the internal exhibition of the medicine has been adhered to, with occasional intermissions, lest it should act injuriously upon the system.

The effect has been that the blueish leaden hue has been partially changed more to a brownish tint, and the skin has become to a certain extent lighter in colour. In some parts of the face the discoloration has been materially lessened, and the natural colour of the skin has in some degree become perceptible. No bad effects have resulted from the long-continued internal exhibition of the hydr. potass.

The unguent. iodin. of the last edition of the Edinburgh Pharmacopœia, and iodine combined in a still larger proportion with the hydriod. potass. have also been used.

In this case, the discoloration has existed upwards of fourteen years.

Dublin Medical Press, Feb. 1, 1843, *p.* 69.

30.—*Hydrated Proto-sulphuret of Iron as an Antidote to Corrosive Sublimate.* By M. Mialhe. I have discovered from experiments that hydrated protosulphuret of iron, a perfectly inert substance, instantly decomposes corrosive sublimate; protochloride of iron and bisulphuret of mercury, two inert substances, are formed, from which valuable property I am induced to designate this sulphuret of iron as the best antidote to the violent poison alluded to.

I intend shortly to publish the details of my chemical and physiological investigations on this subject, but the following chemico-physiological fact may be stated as a strong evidence of the efficacy of this antidote:

When a small quantity of bichloride of mercury is taken into the mouth, there is speedily experienced an insupportable and characteristic metallic taste. If now, the mouth be gargled with the hydrated sulphuret, in a thick state, such as it should always be used in, the mercurial taste is removed as if by enchantment. This fact requires no comment, it speaks sufficiently for itself, without further explanation.

The antidote I am now recommending is not limited in its effects to the mercurial salts, it is equally useful in counteracting the deleterious operation of several other metallic salts, especially those of copper and of lead.

The following is the mode of preparing the hydrated protosulphuret of iron:—

Dissolve any quantity of pure protosulphate of iron in at least twenty times its weight of distilled water, deprived of air by boiling, and precipitate the iron with a sufficient quantity of sulphuret of sodium, dissolved also in distilled water, deprived of air. Wash the protosulphuret thus obtained with distilled water, and preserve it in stoppered bottles, filled with boiled distilled water.

Although the preparation of this sulphuret of iron is very simple, and may be effected in a few minutes, yet it would be desirable to

keep it always prepared, that no time may be unnecessarily lost in any case of poisoning.

The precaution of preserving this sulphuret out of contact of the air, must be strictly observed, as it has a great tendency to pass into the state of sulphate.—*Journal de Pharmacie.*

Pharmaceutical Journal, Dec. 1842, *p* 411.

31.—*Report on the Results of Inoculation in Measles.* By Dr. M. Von Katona, of Borsoder, in Hungary. In a very malignant and wide-spread epidemic of measles in the winter of 1841, the author inoculated 1122 persons with a drop of fluid from a vesicle, or with a drop of the tears of a patient with measles. The operation was performed in the same manner as inoculation for small-pox. It failed in 7 per cent. of those on whom it was tried, but in all the rest it produced the disease in a very mild form, and not one of them died. At first a red areola formed round the puncture, but this soon disappeared: on the seventh day fever set in, with the usual prodromi of measles; on the ninth or tenth the eruption appeared; on the fourteenth desquamation commenced, with decrease of the fever and of the eruption; and by the seventeenth the patients were almost always perfectly well again.—*Oest. Med. Wochenschrift.*

British and Foreign Med. Review, Jan. 1843, *p.* 235.

32.—*Remarkable Case of Congenital Small-Pox.* A woman, twenty four years of age, entered the Maternity Hospital in Paris to pass her first confinement. Labour commenced two days after her arrival: and after the lapse of fourteen hours (*jours*, says the original, but this is evidently an error) she was delivered of a female child. The face, scalp, and different parts of the child's head were covered by a pustular eruption, which was soon recognised to be veritable small-pox. The mother retained the marks of vaccination, and stated that she had never had the small-pox; nor during her pregnancy had she had any connection with persons suffering under that disease, nor even heard of its prevalence in her neighbourhood. Only, about eight or ten days before, she had gone to see a patient at La Pitié, near whom lay another patient in the small-pox. She had paid no attention to this circumstance till recalled to her recollection by minute inquiries. No untoward effects ensued, either to mother or child, and both left the hospital in perfect health soon afterwards.—*Bulletin de l'Acad. Royale.*

Lancet, Feb. 18, 1843, *p.* 741.

33.—*Treatment of Passive Dropsy.* By M. Debreyne. As serous evacuations in the cure of dropsy pass off most frequently by the kidneys and intestines, M. D. is of opinion, that the diuretics and purgatives employed, to attain this end, ought to be combined; at the same time he recommends a dry diet, and that the patient should drink as little as possible. If the thirst is very urgent, it ought to be allayed by sucking oranges, grapes, citrons, &c. The

following is the composition of what he calls his strong diuretic wine.

℞. Pulv. Jalap, grammes viij; Pulv. Scillæ, grammes viij; Nitratis Potassæ, grammes xv. M.

These substances are to be macerated for 24 hours in a bottle and a quarter of white wine, and he directs a table spoonful to be given three times a-day; the dose is to be gradually increased until nine table spoonfuls are taken daily. The stools, he says, ought never to exceed seven or eight per diem. If there is merely œdema of the lower extremities, he gives his weak diuretic wine, the ingredients of which are,

℞. Nitratis Potassæ, grammes xij; Baccæ Juniperi, grammes lx. M.

These are also allowed to remain for the same length of time in a similar quantity of wine, and the dose consists of a wine glassful three times a-day. M. Debreyne by no means avers that these remedies are specific. They are only to be employed in passive dropsy, which cannot be cured by a rational treatment directed either to attack the cause of the disease, or one had recourse to with that view.—*Bulletin Thérap.;* abridged from *L'Expérience.*

Lond. and Edin. M. Journal of Med. Science, Feb. 1843, *p.* 147.

34.—*Nitrate of Potass in Asthma.* A correspondent of the New York Medical Gazette, says that he had derived essential benefit from using the following remedy, in severe attacks of asthma, and has prescribed it for several patients with equal success. Immerse thick porous paper in a solution of nitrate of potass, or common saltpetre, and hang it up to dry. At the approach of a paroxysm, inhale the vapour by burning it in the room, or smoking it in a tobacco pipe. The writer says, he "is acquainted with several asthmatics who are unable to breathe in a recumbent position until their sleeping apartment had been filled with the above vapour."

We can add our testimony to the utility, in some cases, of this remedy. We have several times prescribed it, and in some cases the relief it afforded seemed almost magical, in others, however, it entirely failed. The solution of nitrate of potass should be a saturated one; and after the paper has been immersed and dried it is best to immerse it a second time. A very good plan of filling the room with the vapour, is to roll up a sheet of the proper size, and place it in a candlestick. The end being then ignited, it gradually burns and the vapour diffuses itself through the chamber.

American Journal of the Medical Sciences, Jan. 1843, *p.* 262.

35.—*On Preparations of the Citrate of Iron.* By M. Mialhe. The "Journal of Chemistry" gives the following formula for the preparation of the citrate of iron:—Take, of crystallised citric acid, three parts; hydrated peroxide of iron, two parts; distilled water, twelve parts. Boil together until the oxide is completely dissolved; then filter and add enough of water to replace what has been eva-

porated, and make up twelve parts of fluid. If we wish to obtain the citrate dry, a layer of the fluid is placed on a square of glass and evaporated in the stove. The citrate of iron thus obtained is of a fine rusty red colour; dissolves perfectly, though slowly, in water; is of a strongly acid taste, astringent, and slightly styptic.

Within the last few years—that is, since the citrate of iron has been introduced as an article of trade—two very distinct varieties are to be found in chemists' shops. One presents the characters just mentioned, and is the pure citrate of the peroxide of iron. The other is the preparation of a very different kind; it dissolves much more quickly in water, and the solution, instead of being of a yellowish red, is of a yellow green colour; its taste is rather alkaline than ferruginous; in a word, it is a double citrate, containing a greater or less proportion of soda or ammonia.

Now, as it seems clear that these two preparations must possess different medical properties, I think that physicians would do well if they would distinguish, in their prescriptions, the acid from the alkaline preparation.

EFFERVESCING CHALYBEATE WATER.

Water, 625 scruples; dry citrate of iron, 1 scruple; citric acid, 4 scruples; bicarbonate of soda, 5 scruples; add first the citrate of iron and citric acid; then the bicarbonate of soda, taking care to cork the bottle at once, and secure the cork.

This latter preparation has very little metallic taste, and is quite as agreeable as the Vichy water; when mixed with wine it does not render it turbid as Vichy water does, and is certainly a more active remedy.—*Bul. de Thérapeutique.*

Provincial Medical and Surgical Journal, Dec. 10, 1842, *p.* 210.

36.—*Creasote in Leucorrhœa.* By Dr. R. H. Allnatt. Some years since my attention was drawn to a case of gonorrhœa in a female which had resisted a variety of measures for its removal, and as it was at the period when creasote was being introduced to the notice of practitioners by the most extravagant eulogies, and was lauded (as new remedies are sometimes wont to be) as a specific for almost all diseases, I was induced to give it a trial in the case alluded to. As my observations were published at the time, I will merely state that the effects of the creasote were strikingly marked, and that the discharge (which was very copious) was speedily subdued. Since then I have employed the same remedy in leucorrhœa, with the same beneficial results. A record of the last case, taken from my notes, may, perhaps, illustrate the rapidity of its action, and the precise method of its employment:—

A. E., a young woman in the fifth month of her first pregnancy, labouring under leucorrhœa, which had subsisted many years, and had increased rapidly from the first month of conception. The discharge, at the time she first consulted me, was exceedingly profuse, amounting, according to her own statement, to upwards of twelve ounces in twenty-four hours, and was of an opake dirty yellow

(muco-purulent). She had been treated with the ordinary astringent injections, and had taken copaiba and cubebs in large quantities, without the slightest relief. The copiousness of the evacuation produced a certain degree of emaciation, and from being a robust vigorous woman, she was now anemic, and rapidly wasting in vital and physical energy. I ordered the usnal creasote injection. and the discharge was materially arrested on the third day of its application, and, as I have not since seen the patient, I presume I may note her down as "convalescent."

The physiological action of creasote on morbidly secreting mucous tissues opens, I think, a wide field of inquiry.

The following is the formula I generally adopt for adults:—

℞ Creasote, minims xx; solution of potash, ʒij; white sugar, ʒij. Rub together in a mortar; afterwards add, by degrees, eight ounces of water. Mix. Make an injection, to be used three times a-day.

In obstinate cases of gleet, occurring in flabby leucophlegmatic *males*, I propose this remedy to the notice of practitioners with great confidence.

Lancet, *Dec.* 31, 1842, *p.* 504.

37.—*Leucorrhœa Cured by Iodine.* M. Ch. Van Steenkiste has published the details of two cases of leucorrhœa treated with iodine injections, in the "Annales de la Société Medico-Chirurgicale de Bruges." The first case in which he tried it was that of a sempstress, twenty-two years of age, of a scrofulous constitution, who had laboured under leucorrhœa three years. The discharge was thick and abundant, and of a milky or slightly yellow colour. The patient presented all the symptoms of anæmia; the mucous membrane of the vagina was very pale, the cervix uteri red and tumefied. The genitals were excoriated. An injection, containing four scruples of iodine, sixty of alcohol at 25°, and 125 of common water was ordered for her, of which about thirty scruples were thrown up into the vagina. Heat and irritation were immediately experienced in the parts, and the discharge ceased entirely for three hours, returning then in larger quantity than ever, accompanied for a few minutes with very severe pain in the genitals, headache, and general spasms. These symptoms soon disappeared, and the discharge did not again return till the next day, when the same quantity of iodine was injected, less severe symptoms following its use. The catamenial secretion, which had been absent seven months, appeared towards evening, and continued for three consecutive days, unaccompanied by any other discharge. On its cessation, the leucorrhœa again showed itself, but in less quantity than before. M. Steenkiste, desirous of retaining the iodine more in contact with the vaginal mucous membrane than it had been previously, introduced a speculum, with the assistance of which he filled the vagina with five pieces of charpie, soaked with the iodine, and left them there, intending to remove them in an hour's time. Four of these

pledgets were expelled by pains which came on in the interval, and when the surgeon sought to withdraw the fifth he could not introduce the speculum, the vagina was so contracted. The cure thus induced has been permanent, and the catamenia have again appeared. The second case was equally satisfactory.

Provincial Medical Journal, April 22, 1843, *p.* 80.

38.—*On Cancrum Oris, and Phagedæna of the Cheek.* By Henry Hunt, M.D. Dr. Hunt describes these diseases as being identical, varying only in the degree of severity—both commencing by ulceration of the mucous membrane of the cheek, or where it joins the gums, and that the external eschar is the consequence of the internal ulceration. He considers them to proceed from a cachectic state of the system; that they occur more commonly in cold and wet weather—sometimes attacking several members of the same family simultaneously, and occasionally prevailing almost like an epidemic. The author has treated them very successfully by a free exhibition of the chlorate of potash, the beneficial influence of that salt being generally apparent within forty-eight hours of its being given, that it seldom fails to arrest the progress and to effect a cure, if administered prior to the patient being very much exhausted. The quantity of the salt he has been in the habit of prescribing varies from ℈j. to ℈ij. in twelve hours, according to the age of the child. *Medical Gazette, April* 7, 1843, *p.* 76.

39.—*Value of Turpentine in Internal Hæmorrhages.* By W. Hughes Willshire, M.D., M.B.S., Lecturer on Materia Medica at the Charing Cross Hospital, and Physician to the Fore-street Dispensary. I consider the profession highly indebted to Dr. Copland for the strong manner in which he has drawn the attention of practitioners to the remedial powers of turpentine in hæmorrhages generally. I have used this agent very extensively, and in no case but one has it failed where it was employed; this was a case of hæmatemesis. I regard it as one of the most able weapons in the hands of the practitioner, and, as Dr. Copland has remarked, when absorbed into the circulation its astringent effects on the capillaries are remarkable. It has, besides, this great value, that it acts more quickly than any other astringent, and I have seen hæmoptysis which continued in spite of other remedies yield at once to this. In one case, I remember, the discharge supervened after the turpentine was omitted, and ceased again on having recourse to it; came on once more and disappeared again as the turpentine was omitted or renewed, and the succession of phenomena were rather rapid, though strongly marked; in this case the turpentine was continued for some time after the last discharge, and no more occurred. It has, again, another advantage, that it may be administered both in the active and passive forms of the disease, if due regard be paid to the vital powers of the patient. Large doses reduce the power of the heart and constringe the capillaries after the temporary excitement of the nervous system, which, it is confessed, it often, but not always,

produces; but as Dr. Copland has remarked, however, with respect to one sequence of its local action, this general nervous derangement soon subsides; in such doses it is valuable in the more active conditions. In smaller doses it strengthens the minuter vessels and alters their powers so as to restrain their sanguineous effusion without lessening the vigour of their vital powers generally, and thus it is adaptable to passive states of the disease. In those cases in which smaller doses have been employed I hold it to be necessary that it be continued some time after the last ejection of blood.

Lancet, Dec. 31, 1843, *p.* 492.

40.—*Gaseous Chalybeate Water Powder.* ℞. Bicarbonate of soda 98 parts, tartaric acid 116 do., sulphate of iron 3 do., sugar (white) 280 do.—Mix in the state of coarse powder, and keep it dry.—This is the quantity for one bottle (quart).

Medical Times, April 22, 1843, *p.* 64.

41.—*On the Non-Restraint System in the Management of the Insane.* The system of non-restraint so happily transplanted from Lincoln to Hanwell still flourishes and bears fruit. If it is a subject of just exultation to the French, that Pinel abolished the use of chains at the Bicetre, and first emancipated lunatics from the reign of terror, we may boast that the scholars can now instruct their teachers, and return the lessons of philanthropy with rich usury. Dr. Crommelinck has lately sent in a report to the Minister of the Interior, in Belgium, on the lunatic asylums of England, France, and Belgium, clearly showing the superiority of our own.

The appearance and general state of the patients in the wards of Hanwell, the order, activity, and cheerfulness, which pervade the Asylum, and the rapid subsidence of the wildness of new patients, are all alleged by Dr. Conolly as proofs of the superiority of the gentle plan of treatment. It occasionally happens that patients are brought into the Asylum in severe restraints. They are immediately set free; nor is the restraint ever put on again; yet the patients remain quiet.

In one of the remarkable cases narrated by Dr. Conolly, "a delicate girl, of small stature, and epileptic, was brought to the Asylum in close restraint, her wrists and ankles marked with iron handcuffs and leg-locks." The warm bath and the removal of restraints restored her to ease and content. In her tranquil state, her expressions were those of gratitude and affection; but during the maniacal excitement which accompanied her epileptic fits, her past impressions predominated, and she often fell on her knees and entreated that no one might be allowed to come and tie her down. She has now been managed for five months entirely without restraint.

What was once an experiment is now a successful system, and the wards of a lunatic asylum need no longer be a place of terror to the most sensitive visitor. Kindness, which performs miracles everywhere, which, like the sun in the fable, penetrates those rugged

coverings that wind and storm did but apply more closely—kindness is the "open sesamè!" to the heart of the insane, and is a therapeutic agent at once to body and mind.

(Editorial Remarks,) Medical Gazette, Dec. 30, 1842, *p.* 485.

[Mr. Solly, in a letter to the editor of the Medical Gazette, after reading the above remarks, says:]

At 11 o'clock at night, on Saturday, the 5th of November, I visited the wards of the Asylum with Dr. Conolly. There were then, I believe, exactly 948 patients in the house, and not one of them under personal restraint. We went into every ward, and, with the following exceptions, there was not a sound to be heard. Two women, each in different parts of the house, were chaunting or singing in a low tone, just audible; a third was talking violently, but ceased before we left the ward; and one man made use of a violent expression as we passed him. To me it is perfectly astounding that such a death-like stillness should reign in a house containing nearly a thousand lunatics. I shall never forget the impression it made, and the reflections it gave rise to in my mind.

Ibid, Jan. 13, 1843, *p.* 576.

42.—*On Epistaxis.* By John C. Davie, Esq., Haddingham. [In our last volume (vol. VI, p. 129) we gave the simple means of correcting hæmorrhage from the nose, as recommended by Dr. Negrier. It consists in simply holding up one or both arms so as to take off part of the arterial force from the carotids, and at the same time closing the nose. The subjoined case is published in confirmation of this practice.]

Richard Cuttriss, æt. 32, a miller, (Oct. 24th), for the last fortnight felt giddiness, and heaviness of head, and this morning was seized with bleeding from the right nostril, which continued for some time. Cold applications to the head, nose, and elevated position. Ordered the following:—

℞ Magn. Sulph. ʒvi.; Acidi Sulph. Dil. ʒij.; Infus. Ros. C. ℥vi. S. ℥j; 4tâq.h.

25th.—Hæmorrhage again returned from both nostrils to an alarming extent both arms were raised above the head: nares compressed; and in less than two minutes the eruption of blood was completely suppressed. As a precautionary means of avoiding danger, the elevated position of upper extremities, and pressure to the affected parts, were had recourse to for some time after, and I am pleased to say, with the happiest result, the effusion not having returned. The patient stated he had ten different attacks of bleeding; supposed he had lost in the whole a gallon of blood: upon the last occasion he lost more than a quart, besides what was swallowed.

For some days after his head was not free from uneasiness, and bowels constipated. Relieved by resinous aperients, and he has resumed his occupation.

Medical Gazette, Dec. 2, 1842, *p.* 326.

43.—*New Mode of making a Ferruginated Pill of Mercury.* By Dr. Collier. [In Dr. Collier's second edition of the London Pharmacopœia, he gives the outline of a formula for preparing blue pill with sesquioxide of iron. It is as follows:]

℞. Ferri sesquioxydi, ʒj.; Hydrargyri, ʒij; Confect. Rosæ Gallicæ, ʒiij. Contere donec globuli non amplius conspiciantur.

It is made in five minutes; common blue-pill demands a week. The globules are not visible, even by the microscope. It is uniform in its appearance and effects. It makes a smoother pill, retaining its form more permanently. It salivates in a few days in the usual doses. The presence of the iron prevents the wear and tear of the human body under the effects of the mercury. It is particularly eligible for the strumous, the irritable, and for reduced anemial constitutions requiring mercury. The powers of life are not so much (scarcely at all) prostrated under its use. Its resolvent power is greater than that of mercury alone, especially with respect to buboes. Practitioners will at all events know what they are using; at present they have for blue-pill all manner of alloys and sulphurets,—mercurial-zinc pill, mercurial-sulphur pill, &c. &c. &c.

Five grains of sesquioxide will suffice to amalgamate and divide a large quantity of mercury, but I propose the larger proportion as a remedy. *Lancet, March* 24, 1843, *p.* 879.

44.—*Treatment of Incontinence of Urine.* Dr. Steinbeck, of Brandenburg, administered ergot of rye to two women recently delivered, in whom incontinence of urine had been induced by paralysis of the sphincter of the bladder from pressure during labour. The internal administration of this medicament, coupled with the external use of an embrocation containing tincture of cantharides over the hypogastric region, having been followed by complete success in a few days, Dr. Steinbeck entertained the idea of employing the ergot for similar affections in the other sex. Accordingly, to three old men, in whom sudden chill had brought on incontinence of urine, he prescribed the following mixture:—℞. Ergot of rye, half a drachm; water, six ounces; boil for five or six minutes, and add of belladonna leaves fifteen grains. Suffer the infusion to stand till cool; strain, and add of phosphoric acid (medicinal strength), two drachms, extract of nux vomica, four grains, syrup of manna, one ounce. Mix, and take a tablespoonful every two hours. The patients improved in health, and after a few days the above mixture was superseded by the following:—℞. Extract of belladonna, three grains; extract of nux vomica, four and a half grains; phosphoric acid (medicinal), an ounce. Mix and take fifteen drops three times a day. The treatment in each case was successfully concluded by a course of tonic with stimulant remedies.—*Medicinische Zeitung.*

*** The ergot of rye may certainly have been efficacious in the treatment of the latter cases, but we believe no small share of the success derived to have been due to the strychnia present in the extract of nux vomica. *Ibid, March*, 4, 1843, *p.* 838.

45.—*The Echometer.* A talented young physician, Dr. Aldis, has invented this instrument for the purposes of percussion, for which it seems well adapted. It may be procured at Savigny's. The percussor is attached to one end of a lever handle, which is fixed on the shaft of the instrument, like the lever in Assalini's tenaculum. A screw under the lever handle regulates the depth to which it can be depressed, and consequently the height to which the percussor can be raised at the other end, as well as the force of the blow from the percussor. Equal sounds are consequently produced. The instrument is a very ingenious, and likely to prove a very useful one to auscultators.

Medico-Chirurgical Review, Jan. 1843, *p.* 286.

46.—*Nursery Treatment of Infants.* By Joshua Waddington, Esq., Consulting Surgeon of the Royal Sea-Bathing Infirmary, Margate. [The following judicious directions were submitted to Prince Albert:—]

No other kind of milk to be given to an infant in addition to the milk of the mother or wet-nurse.

The less rocking the better.

When asleep, to be laid upon its *right* side.

The best food is "Lemann's biscuit-powder," soaked for twelve hours in cold spring-water, then *boiled* for half an hour, not simmered, or it will turn sour. Very little sugar to be added to the food, and then only at the time *when given.*

Sweets, of every kind, are most injurious, producing acidity, flatulency, and indigestion, sores in the mouth, and disordered secretions.

An infant will take medicine the more readily if made lukewarm in a cup placed in hot-water, adding a very little sugar *when given.*

The warm-bath (at ninety-four degrees of heat, *not less*, for *ten* minutes, every other night) is a valuable remedy in many cases of habitual sickness or constipation.

"Soothing-syrup," sedatives, and anodynes, of every kind, are most prejudicial. They stop the secretions. A very small dose of laudanum given to an infant may produce coma and death.

When an infant is weaned, which is generally advisable at the age of nine months, it is of the utmost importance that it be fed with the milk of *one cow*, and *one only* (a milch-cow), mixed with "Lemann's biscuit-powder" (prepared as before directed) and *very little sugar.*

Boiled bread-pudding forms a light and nutritious dinner, made with stale bread, hot milk, an egg, and very little sugar.

When an infant is twelve months of age, bread and milk should be given every night and morning: stale bread toasted, soaked in a little hot-water, and then the milk (of *one cow*) added *cold.*

Solid meat is not generally required until an infant is fifteen months of age, and then to be given sparingly, and cut very fine. Roasted mutton, or broiled mutton-chop (without fat), is the best meat; next to that, tender *lean* beef or lamb; then fowl, which is

better than chicken; no pork or veal; no pastry; no cheese; *the less butter the better.*

An infant should not be put upon its feet soon, especially while *teething*, or *indisposed.*

Avoid over-feeding at all times, more particularly during *teething.* It is very likely to produce indigestion and disordered secretions, the usual *primary causes* of convulsions, various eruptive complaints, and inflammatory affections of the head, throat, and chest.

Lancet, Dec. 24, 1842, *p.* 471.

47.—*On the Treatment of Hysteria by means of Ergot of Rye.* In two varieties of hysteria, M. Nardo has found the interal administration of the ergot of rye followed by the rapid removal of the disease, viz. in that seeming to depend on simple atony of the genital system, and in that depending on atony of the nervous and genital systems. His practice consisted in administering about a scruple of the ergot with sugar in divided doses each day, intermitting the dose every third or fourth day. A number of cases are shortly related proving the efficacy of the practice, the hysteria and the irregularity or absence of the menstrual secretion being removed at the same time. *Edin. Med. and Surg. Journal, Jan.* 1843, *p.* 225.

48.—*Medicinal Effect of Manganese.* Dr. Krigeler, an Austrian practitioner, having remarked that many workmen who were previously affected with glandular swellings and cutaneous diseases, had by degrees got rid of those affections while employed in a bleaching factory in which oxide of manganese was used, has since employed the latter substance for the cure of such complaints with the happiest results. Its administration to children with scrofulous enlargements of the glands, in doses of one to five centigrammes (one-seventh to three-quarters of a grain), has been found in a very short time to be attended by a diminution of the swellings, which have eventually disappeared altogether under the use of the medicine.—*Oester. Med. Jahrb.* *Lancet, Dec.* 31, 1842, *p.* 493.

49—*Preparations of Iron.* By M. Beral. Experiments undertaken for the purpose of rendering more perfect the preparations of iron used in medicine, have led me to the discovery of several ferruginous products not yet studied, or but little known. I shall make known the more prominent properties of these products, so as to complete what I have already published on ferruginous compounds in general, and on the citrates of iron in particular.

Sesquicitrate of Iron.—The citrate of the sesquioxide of iron is obtained in transparent laminæ, of a beautiful garnet hue.

Protocitrate of Iron.—The citrate of the protoxide of iron is prepared by treating iron-filings with citric acid previously dissolved in distilled water. This salt is white and pulverulent, and but slightly soluble. It is rapidly coloured by light, and by the action of moist air its composition is modified, the iron passing to a higher degree of oxidation. This citrate, like the other protosalts of iron, has a strongly marked chalybeate taste.

Citrate of the Magnetic Oxide of Iron.—Combined with the magnetic oxide of iron, citric acid furnishes an uncrystallizable salt, of a green colour, and susceptible of being formed into transparent laminæ. This salt is soluble and very active, but as its taste is decidedly chalybeate, it is on this account objectionable for internal use. It is remarkable, that its solution does not alter, but preserves its green colour, although exposed to the prolonged action of the atmospheric air.

Citrate of Iron and Quina.—The citrate of iron and quina is a new salt, which was required as a therapeutic agent. This medicine is formed by the combination of four parts of citrate of iron, with one part of citrate of quina. It is obtained in the form of transparent laminæ, soluble, very bitter, and of a garnet hue. This salt is best adapted for administration in the form of pills, on account of its great bitterness.—

SYRUP OF TANNATE OF IRON.

Take of simple syrup, 375 parts; syrup of vinegar, 125 parts; citrate of magnetic oxide of iron, 10 parts; extract of galls, 4 parts. Mix and form into a syrup.

The iron in this preparation is in the state of the magnetic oxide united with an acid. It is soluble, tasteless, and susceptible of useful applications.

Medical Times, March 11, 1843, *p.* 386.

50.—*Aqua Chalybeata.* Messrs. Bewley and Evans, of Dublin, have introduced a preparation of iron under the above name. It contains 13 grains of the citrate of iron in 6 ounces of the mixture. They recommend it on the following grounds:—

"1. The salt of iron, the citrate, to which it owes its efficacy, possesses *permanency of composition*, not being liable to be decomposed by the influence of the atmosphere, and is uniform in its action on the animal economy.

"2. It is *perfectly soluble*, is not subject to be precipitated when taken into the stomach, and is therefore readily and quickly absorbed into the system.

"3. It is not characterised by the *astringency* possessed by the sulphate and chloride, and therefore does not produce the constipation of the bowels, which so frequently results from the administration of those salts.

"4. It is *more agreeable to the taste* than the other preparations of iron; and being combined with the grateful aromatic of the orange kind, it will be taken freely, and with pleasure, by patients who are often with difficulty persuaded to swallow such nauseous draughts as the Mist. Ferri. Aromat., Mist. Ferri. Comp., &c.

"5. Being administered in water highly impregnated with carbonic acid, the salutary tonic properties of this gas are combined with those of the iron. The preparation is thereby rendered *more grateful to the stomach*, as well as more acceptable to the patient, and is assimilated to the esteemed waters of chalybeate springs."

Lond. and Edin. M. Journal of Med. Science, Jan. 1843, *p.* 78.

SURGERY.

51.—ON EXTIRPATION OF DISEASED OVARIA.

By Charles Clay, M.D., Manchester.

[We shall follow Dr. Clay through these cases as briefly as their interesting nature will allow us; and avail ourselves of the information which he has collected respecting one of the most important and dangerous operations in surgery. The removal of an ovarian cyst through a small incision in the abdominal parietes, has been several times recorded in the Medical Journals, and a very interesting case of this description is given by Mr. Phillips in Retrospect, Vol. II, Art. 122; but in this, as well as in all the other cases by English surgeons, Mr. Jeaffreson's operation was adopted, viz.—a small incision of one and a half or two inches in length in the abdominal parietes, through which incision the ovarian sac was then punctured with a trochar, and when emptied of its contents, the sac itself drawn through the incision, its pedicle tied and separated.]

" On the contrary," says Dr. Clay, " the operation performed by Dr. Macdowal, of Kentucky, in America, Mr. Lizars of Edinburgh, and myself, is widely different. A large incision of eighteen or twenty inches in length, or from the ensiform cartilage to the pubes is made, the ovarian tumour fully exposed, its pedicle and adhesions separated, its vessels secured, and the whole mass removed entire. A slight glance will be sufficient to distinguish the difference between these operations."

[The first case related by Dr. Clay was that of Mrs. Wheeler, of 75, Heyrod Street, Manchester, who began to enlarge at the end of 1839. From February 1840, the enlargement increased more rapidly, still the menses appeared regularly, she being then about 44 years old. Dr. Clay proceeds to say,]

At the time of her consulting me (June 10th 1842) she was much emaciated, tall in person, of a sallow countenance, and appeared as large as a female in the ninth month of gestation; menstruation still regular, complained of great weight and incumbrance, but had not suffered any particular pain. I proposed calling on her at her own house, with the view of making a proper investigation; to which she readily consented. On examination, per vaginam, I found the coats of the vaginal canal protruding outwards to a considerable

extent, which circumstance must have existed for some time, as the parts protruding had lost their natural texture and character, and were hard and dry, as a piece of fish skin; the pelvic cavity was filled by a large tumour, so completely, that its extent could neither be defined, nor could it be moved by the finger in the slightest degree; the tumour appeared distinct from the uterus, and the uterus itself was lifted up higher out of the pelvis than usual, and the os uteri rested against the upper and inner portion of the symphysis pubis, and was very much flattened; the external abdominal parietes presented to view a distention quite equal to the ninth month of utero gestation,—it was of very unequal character, exhibiting protuberances in various parts, not unlike what the head, limbs, &c. of a child would present if escaped from the uterine cavity, and lying immediately under the parietes of the abdomen, rendered thin by great distention. The case was evidently an enormous tumour, occupying the whole abdominal and pelvic cavities, and from its unequal appearance, was, in all probability, composed of various sacs. The vagueness of its history, and its central position, did not clearly point out where its attachment might be, though it was most probably to the uterus or its appendages—the ovaria; the tumour was easily moveable under the parietes, and a small quantity of ascitic fluid had been deposited in the abdominal cavity, which gave the tumour the feeling of floating in fluid, and led to the opinion that it had no adhesions beyond its pedicle, by which it was attached. The left iliac region was more densely filled than the right; but the history of the case rather encouraged the idea that the origin of the disease was on the right side. I requested my friend, Dr. Radford, (an experienced practitioner, and physician to the Manchester and Salford Lying-Inn Hospital,) to give me his opinion on the case; who, after a most careful examination, pronounced it decidedly an ovarian tumour of considerable size, with a small quantity of ascitic fluid, and, from its mobility under the parietes, he considered there could not be any adhesions beyond its principal attachment; that it most probably arose from the broad ligament on the right side. I afterwards obtained the opinion of several other medical friends on whose judgment I had great reliance, all of whom confirmed the opinions previously given. It was also considered by Dr. Radford and myself that no effectual means of relief presented itself but that of extirpation.

[Several other eminent practitioners were consulted, and with their concurrence, extirpation was finally determined upon—and that, not by the small incision, but by the large one recommended by Mr. Lizars. At the time this operation was undertaken, it seems there had been recorded eight cases operated upon by the small incision of Mr. Jeaffreson, of which five proved fatal. By the large incision of Mr. Lizars, there had been four by himself, three by Dr. Macdowal, of Kentucky, one by Dr. Smith, of Connecticut, and one by L'Aumônier in France, which, with the one now described by Dr. Clay, make ten, of which only one was fatal.

Under these circumstances, it certainly may be looked upon as the more favourable operation of the two. The evening before the operation, Dr. Clay gave the patient 10 grains of inspissated ox-gall,* ordering a repetition of the dose early in the morning.

The operation was performed as follows, in the presence of Dr. Radford, Dr. Black, Messrs. W. C. Vaudrey, Nursaw, G. Southam, J. J. Southam, surgeons, and Mr. Higginbottom, nephew to Dr. Radford.]

Operation.—I placed my patient on a long narrow table covered with blankets, her head a little raised with pillows, and the abdominal parietes so situated that the best light the room afforded fell upon the part to be operated on; taking my station on the patient's right side, with a large scalpel, I severed the integuments from within a short distance of the ensiform cartilage, to the pubes at one stroke: at this time it was remarked, how extremely thin the integuments were immediately over the umbilical region, which formed the most prominent part of the tumour, being scarcely thicker than strong paper. I now carefully cut through the peritoneum, at the upper end of the first incision, nearest the sternum, sufficiently to introduce two fingers of my left hand, which I had no sooner done, than I met with an adhesion, but which must have been recent, as it gave way easily before the fingers. I now introduced the probe-pointed bistoury, and under the protection of my fingers already introduced, lest the abdominal viscera should be injured, I cut with the bistoury the peritoneum equal to the outward incision. At this moment, none, but those who have witnessed such a scene, could have any idea of the extent and formidable appearance of the operation—the incision from sternum to pubes over the bulky tumour could not be less than twenty-four inches (being eighteen when the parts were flaccid subsequently), perhaps as large an incision as ever was made in the living subject; the parietes of the abdomen rapidly retiring laterally, and the enormous tumour, as it were, springing forward, was sufficient to startle the coolest and most determined individual. The uterus was lifted up from its normal position, and lay flattened against the anterior, and inferior, part of the tumour; its right broad ligament expanded on, and connected with, the tumour, forming its pedicle. The uterus as well as the appendages on the left side were perfectly healthy; the pedicle was then secured by a strong ligature, and separated; the tumour being firmly attached to about three inches of the broad ligament. On separating the pedicle, which was of considerable thickness, it was found that the main ligature did not prevent the vessels (that passed through it to supply the tumour) from freely pouring out blood; and it therefore became necessary to take them up by separate ligatures, one end of each being brought outwards with the main ligature of the pedicle. I now passed my hand round the tumour in search of adhesions; three or four of very

* In Retrospect Vol. VI., p. 93, will be found an interesting article on the subject of Ox-Gall removing costiveness, &c.

recent character presented themselves, which gave way to the slightest touch of the fingers, and required no scalpel for their separation, but on the upper surface of the tumour, higher than the umbilicus and on the patient's left side, an omental adhesion, spreading for some space on the tumour, shewed itself; this I separated with the scalpel, when a small vessel poured out blood freely, which I secured and cut the ligature off close. My friend Mr. W. C. Vaudrey had now held the tumour raised for some time, to facilitate my search for adhesions; when all appeared clear I placed my hands in the iliac regions, and assisted him in raising the huge mass fairly from the abdominal cavity, in doing which a considerable force was required as the pelvic portion of the tumour filled that cavity so completely, that it felt similar to the attempt of pulling off a well exhausted cupping glass, from some fleshy part of the body. Dr. Radford and Mr. Vaudrey paid every attention to the patient and gave her a tea-spoonful or two of brandy and water, whilst I immediately but temporarily brought the parietes of the abdomen together; Mr. Nursaw and Mr. Southam kept them in their position, and I continued to sponge the lower part of the incision, as long as any fluid shewed itself, which was chiefly the remains of the ascitic deposit slightly tinged with the little blood that had been lost in securing the vessels of the pedicle; long as this account may appear, the time consumed up to this, was only twelve minutes and a half, and (as I had no ambition of making it a bloodless operation) about fourteen ounces were lost, rather more than in all probability would have been, in consequence of one of the ligatures missing its hold, but, after all, no more than, in my opinion, benefited the patient afterwards. The integuments were brought together by nine stitches, and straps of adhesive plaister between each, with long straps over the ends of the cross straps; and two long pads of linen were laid on either side of the incision, and over all a stout bandage of some breadth. My patient was then carefully lifted into bed, about forty-five minutes from the commencement; cheerful, and complaining only of a pain about the last lumbar vertebræ and right iliac region, which I attributed to the extension of the pedicle during the operation, which, though as little as possible, it was *impossible wholly* to avoid.

[The tumour weighed 17lbs. 5 ounces, Apothecaries' weight, and its largest circumference was 3 feet 8 inches, its shortest circumference 2 feet. It will not be necessary to detail the subsequent treatment which was very simple and exceedingly judicious. We will conclude this case by giving Dr. Clay's general observations.]

General Observations.—Thus terminated successfully, not only this formidable operation, but its subsequent treatment; a more satisfactory issue could not have been anticipated by any person who witnessed it; the simplicity of the treatment throughout was remarkable: procuring evacuations of fæces and urine, when it was thought the parts were overloaded; and a few hours sleep occasionally, when the case appeared to require it, were the only means put in practice;

as little medicine as possible was exhibited for evacuations from the bowels; clysters were preferred to any purgative, and emptying the bladder, until natural efforts were able to accomplish the same. In procuring sleep, common opiates were avoided, in consequence of their tendency to constipation. The tinct. hyoscy., and the mur. morphia, given in combination had the best effect, but even those were given as seldom as possible. I am of opinion that nature is capable of effecting much more than she obtains credit for; and the less we interfere with her the better. I am the more convinced of this, by the plans of treatment adopted by others, particularly in the minor operation (as proposed by Mr. Jeaffreson) in the case treated by Mr. Phillips, reported in the Medical Gazette, vol. 1, 1840-41, p. 83, and which, in my opinion, was far too complicated. It will also be observed that I did not exhibit a brisk cathartic before the operation, as recommended by Mr. Lizars. I dissented from this plan, simply because I considered the operation of cathartics as producing a degree of irritation which I felt wishful to avoid: I therefore substituted the inspissated ox-gall, which extensive experience has pointed out to me as an excellent solvent of the fæcal matter of the intestinal canal; and by the solution, its propulsion is facilitated without producing the slightest irritation. This remedy appears also to have a peculiar effect of ridding the intestines of flatus, a matter of great consequence in such an operation, and it was in this case remarked by many medical gentlemen present, how void of flatus the intestines were; by which the operation was very much facilitated. In applying more interrupted sutures than Mr. Lizars, I merely adopted a hint thrown out by that excellent operator, that it was better to have plenty than too few; which, with the precaution of marking the parietes cross-ways with nitrate of silver previous to the operation, rendered eversion of any part of the incised wound impossible. Why the incision should not pass directly through the umbilicus may be asked with propriety? My own opinion is, and probably it was the opinion of Mr. Lizars, that the wound would be less inclined to heal (if through the umbilicus); in the case just related, the last part to heal, with the exception of where the ligatures passed outwards, was in the vicinity of the umbilicus. In all operations of this kind, however, I should keep strictly to the linea alba except at the umbilicus, which I would leave to the right or left about half an inch, coming to the linea alba again as soon as possible. So long as the dressings continue in good condition, there ought to be no hurry in removing them. In this case, the fifth day had concluded before the first dressings were taken off, and then with great caution, lest the patient might take cold; it is therefore necessary that the temperature of the room should be attended to at the time, as well as in subsequent dressings, as there is considerable exposure. On examining the tumour after its extirpation, the portion lying in the pelvic cavity was in a state of ulceration, it was therefore fortunate the operation took place, had it been delayed the result might not have been so satisfactory, and as the weather began to be cold about the 21st of

September, an artificial temperature must have been substituted, which might not have been so easily manageable, particularly as the operation was performed in a small cottage room, where the least inattention might produce a great alteration in the temperature. On the morning of the third day after the operation, flatus became troublesome for the first time, which was effectually removed by the introduction of an elastic gum tube a few inches up the rectum; a plan which I should earnestly recommend as effectual without producing any irritation. In expelling the flatus, as well as the clysters, considerable assistance was given by a six-tailed bandage crossed over the abdomen, imitating the action of the abdominal muscles. The most rigid principles were adopted as to diet, and on this, I consider, much of the credit of the cure depended. I was of opinion that in such cases the principle of stimulants, whether as medicine or diet was injurious; I therefore adopted the simplest matters for food and drink I could think of. Boiled bread, bread out of toast water, toast water, gum mucilage, thin arrow root, gruel, and German rusks softened in toast water were rigidly enforced for the first six days; and up to the twelfth day, only boiled rice, a little milk added to the arrow root, and a little weak tea were added; so that my patient complained more of being starved than otherwise. When I look back at the many circumstances which might be deemed unfavourable in the case here recorded, I am the more convinced of the propriety of this operation in preference to the minor one proposed by Mr. Jeaffreson. My patient was old, the period of cessation of menstrual discharge, with its many bad consequences (though it had not taken place) might reasonably be expected to interfere with the cure; adhesions existed; the tumour was large, the pressure had produced ascites, ulceration had commenced in the pelvic mass; there was one large cyst combined with six or seven smaller ones; the cysts were also combined with nearly seven pounds of a consolidated mass of cartilaginous and fibrous texture; and lastly, my patient was worn down by long disease, emaciated, and distressed in spirit, before relief was proposed by an operation. In these symptoms there are some points so decidedly opposed to the mode of operation as proposed by Mr. Jeaffreson, that I cannot avoid drawing a comparison. If it were positively certain, that the ovarian tumour was composed of only one, two, or even three cysts, provided they could be defined and punctured; if it were equally certain that no adhesions existed beyond the pedicle, and if we could be assured no part of the tumour was consolidated; then I should say that the minor operation of Mr. Jeaffreson would be the only justifiable one: but if any one of these objections exist, I am decidedly of opinion that we had better let the patient alone. The fatality shewn by the results of those operations in almost every person's hands, with the exception of Mr. Jeaffreson, and once by Mr. King, fully justify the remarks I have just made upon it. It would be difficult to puncture more than one cyst, it would be impossible to draw the cyst through a small opening if adhesions existed, without doing

irreparable mischief; it would be equally impossible to extract through a small opening unpunctured smaller cysts, or a portion of consolidated tumour.* The question then is, are these objectionable points frequent ? Mr. Phillips says, "That more than one cyst may exist in the same tumour at the same time cannot be denied; but although it may be, it is rarely the case." I am afraid this conclusion has been drawn too hastily; the number of cases of punctured ovarian cysts, is too few to warrant too general a conclusion: the case I have here reported is contradictory to this view. Two of the cases of Mr. Lizars had more than one cyst, and from specimens of post-mortem extraction of diseased ovaria, I believe the fact of more cysts than one in the same tumour, to be more common than Mr. Phillips supposes. I think he would have been more correct in stating, that generally there is one very large cyst, and more or less smaller ones. Again, Mr. Phillips observes, "*The co-existence of a solid tumour and a large cyst, I do not deny that it may happen, but I do maintain it to be a rare exception.*" In my case the solid part of the tumour was equal in weight to the saculated part with its contents. I have a post-mortem specimen where the solid part is equal to the sac. Some of Dr. Macdowal's cases, as well as Mr. Lizars', I believe, possessed similar features. Lastly, Mr. Phillips asserts, "*That adhesions are not frequent.*" On the contrary, Dr. Seymour in his excellent work states, that adhesions exist in ninety-nine cases out of the hundred; both assertions, perhaps, are too much in the extreme; but one more moderate might have been made, *that adhesions very commonly exist;* I have never yet seen a case entirely free from them. Now let the reader suppose a case of more sacs or

* [Mr. Jeaffreson states that Dr. Clay is in some measure mistaken as to his views respecting this operation. He says, "It was never my intention to advise any simple operation for ovarian dropsy in cases of enlarged and diseased ovaria as described by the doctor; but as my previous painful experience consisted of nearly twenty fatal cases, occurring in my own and in the practice of others, I lost no time in making the members of the Provincial Medical Association acquainted with the facts of my first case by reading them a short paper on the subject at their next meeting, and which is published in the fifth volume of the Transactions The subject of this case is now in good health, and has been pregnant three times since the operation, and given birth to three healthful children.

I have since witnessed a successful operation by Mr. King, of Saxmundham, and another by my friend, Mr. Crisp, of Harleston, Norfolk. The lady, the subject of the last-mentioned case, had been 23 years suffering from the disease, and had been twice tapped. Three gallons of fluid were taken from the cyst, which was then removed without the slightest difficulty; indeed, I would always enlarge the wound, should difficulty occur at this period of the operation, rather than make use of violent traction, and, should the circumstances of the case require it, this operation might be converted into the formidable one recommended by Dr. Clay. This lady perfectly recovered, and has enjoyed several years of health since the operation. Mr. West, of Tonbridge, has likewise published several successful cases: therefore I think Dr. Clay must be wrong in his estimate of the comparative success of the two operations."—*Medical Times, Jan.* 14, 1843, *p.* 255.]

cysts than one or two, or of one with a large consolidated mass with or without eyst, or one with adhesions, though not extensive, and then let him imagine himself employed in bringing this tumefied mass away by dragging it through a small opening of one and a half or two inches. I certainly should not envy his position; the tearing asunder these adhesions, the difficulty of puncturing a number of cysts, the tearing and enlarging the outward incision by the force required, and lastly, the impossibility of bringing such a mass through so small a space; all of these, or any one of them existing, or the bare possibility that such might exist, is sufficient to condemn the mode of extraction by small incision; and how are we to know that these do not exist? Every person who has paid attention to the subject, knows how very obscure the symptoms of ovarian disease often are, and how very difficult it is to form a correct diagnosis as to the particular state of the tumour; adhesions have been found where none were anticipated, and they have been absent when confidently expected. It is often difficult to say to which side the pedicle is attached, equally difficult to say if the tumour contains one or more cysts, and impossible to tell if any part of the tumour be consolidated or not. By the large incision, whatever difficulty presents itself, we are prepared for it; it matters not which side the pedicle may be: there is plenty of room for cutting asunder the adhesions, however numerous; the whole mass may be removed entire without puncturing the cysts, thus avoiding the disagreeable circumstance of the fluid of the cyst escaping into the abdominal cavity, perhaps one great cause of death in the minor operation; and lastly, we have now abundant proof that peritoneal inflammation is not a whit more excited by a bold opening, than by a smaller one. It must also be borne in mind that the tearing away of the adhesions, *unless very recent ones*, is entirely avoided by the operation of the large incision.

The principal opposition to the large incision, as practiced by myself, Mr. Lizars, and Dr. Macdowal, consists of prejudice, and too much dread in making openings into the abdominal cavity; but time and a few more successful cases will soon overcome both the prejudice and reluctance of surgeons on this subject, and if I am not mistaken, a new era is opening upon us, as to operations on the abdominal and pelvic viscera. One thing is certain, we can make an opening of any extent, and explore the viscera without any more danger of inflammation than *might follow* the most trifling puncture of the peritoneum. For myself, I feel I should be justified in making extensive incisions into the abdominal cavity, for other objects than the one here related. I would ask what should prevent the spleen from being extirpated when diseased? Or fatty tumours of the omentum? Or tumours of the fundus uteri? In fact, what has been done, is enough to enable me to declare the large incision operation for extirpating the diseased ovaria, *a perfectly legitimate operation;* more successful than the one proposed as its substitute, and, that ere long, operations will be performed on the abdominal regions, hitherto unknown in operative surgery, and with safer results than heretofore. The celebrated Lizars says, " *On considering the nature*

of serous membranes, it appears, they are less prone to inflammation than cellular tissues which are more confined, or shut up. The exhalation, which is perpetually going on seems to moderate action, which is strikingly illustrated by dropsy of the tunica vaginalis testis, where the greatest difficulty is experienced by the surgeon in producing inflammation sufficient for adhesion."

After operations of this nature, the danger is in the first twenty-four hours; first from hæmorrhage from the secured vessels, and secondly, from peritoneal inflammation, which can easily be checked if bleeding be timely resorted to; *but if neglected*, death is almost certain. In my case, the pedicle was rather thick, and the only drawback attending this, is, that the ligature may not be sufficient to stop the bleeding of the vessels contained in it for supplying the tumour, and thereby requiring ligatures on the vessels themselves.

In respect to the connection of ascites with ovarian disease, Mr. Lizars remarks, "Again, diseased ovarium is frequently accompanied with ascites; so that in our treatment, when we are aware that there is ascites, and suspect a diseased ovarium, *we should first perform paracentesis abdominis.*" I am inclined however, to differ in opinion with this celebrated surgeon, believing that peritoneal inflammation would be more likely to occur from the operation by incision and consequent exposure of the viscera, *if paracentesis abdominis had been previously performed;* because some excitement of inflammatory action would have occurred in healing the tapping wound, which, though it might be slight, still might the more easily be excited again. *I think it therefore safer to perform the operation of extirpation at once, allowing the ascitic fluid to come away at the same time.* In the case of paracentesis abdominis, which I have just mentioned, I certainly should not have performed that operation had I been positively certain of the existence of a tumour; but as neither the history of the case, nor present examination, pointed out such a circumstance as probable, I acted accordingly. The case of Mrs. Wheeler bears out the fact as already advanced by Mr. Lizars, that the most formidable adhesions to be met with in ovarian tumours, are omental; in this case, a vessel of moderate size was so connected with the tumour, as to require securing when cut asunder. The pedicle, as I expected from the history of the cases of various authors, I found to be simply the broad ligament of the uterus, which with the fallopian tube, were of considerable thickness, so much so, as to interfere with the security of the vessels contained in it to supply the tumour, requiring them to be separately secured; this, future operators should carefully bear in mind. Mr. Lizars also recommends, if the long incision give not room sufficient for the tumour to be extirpated, to make a transverse incision. *I presume he means towards that side where the pedicle is expected to be found.* I am not prepared to say whether this be necessary, but am inclined to think that there is no tumour capable of being held within the parietes abdominis, but what might be extirpated through an incision from the ensiform cartilage to the pubes.

Looking at all the circumstances connected not only with the oper-

ation by large and small incision for diseased ovaria, but in all operations that have taken place in respect to the abdominal cavity, where the peritoneum has been cut, there is abundant evidence to prove that the peritoneum is not by any means so disposed to take on inflammatory action, as has been generally supposed; and this simple fact in itself, may create a great change in abdominal surgery. Hitherto extirpation of diseased ovaria by the large incision particularly, has been held as highly speculative and improper; but surely the results that can now be shewn, must at once and for ever settle the question, and establish it as a perfectly legitimate and more than ordinarily successful capital operation; as I shall more distinctly prove at the conclusion of this paper, that is, if medical statistics are to be relied upon at all. When compared with the results of other capital operations, lithotomy, lithotrity, and even amputation, it stands in a far more favourable position, and it is a very strange prejudice indeed, that can admit those capital, and more frequently fatal operations above mentioned, *as legitimate and advisable*, whilst one less fatal is summarily condemned, and forborne to be mentioned in the instructions to the rising faculty. I think I have said enough to prove that preference ought to be given to the operation by large incision for the extirpation of diseased ovaria; the very great obscurity hanging over the many circumstances connected with the tumour are only safely to be met, by the free incision. To attempt the minor operation and meet with those features *known to be frequent*, must compel the operator to resort to the large incision under the unfavourable circumstances of a partly emptied tumour, fluid escaped into the abdominal cavity, and adhesions lacerated; or the dreadful alternative, death to the patient without an attempt to relieve.

It is to be hoped that the prejudice hitherto existing against this rare and formidable, but successful operation, will cease; and that it will in future be classed where its merits have proved it to be worthy.

[Dr. Clay's second case was that of Elizabeth Berwick, æt. 57. The abdomen was distended with fluid, which, on being evacuated by tapping, left an ovarian tumour about four pounds in weight. Before the operation the usual dose of inspissated ox-gall was given and the operation was then performed in the same way as in the preceding case. Dr. Clay ends this case by the following remarks.]

Additional general observations.—The success of this second case cannot but be admitted as more remarkable and conclusive than the first. The advanced age of my patient, the numerous adhesions, the extensive ascitic deposit, and worn down constitution, offered but slight prospects of recovery; still the depression of her mind, and the inconvenience of a burthen accompanied with great pain, coupled with the positive assurance that her case was perfectly hopeless, rendered even the smallest chance of life by operation very desirable. Under such circumstances, then, the proceeding was justifiable, and her perfect and rapid recovery only tends to confirm

the views I have before expressed in respect to this operation. In my mind I feel convinced that in very many instances of apparently incurable ascites, ovarian disease has previously existed, which in fact is the exciting cause of the ascitic deposit. This second case, also proves the value of the simplest mode of treatment. One dose of mur. morphine immediately after the operation, two aperient doses of inspissated gall, and two clysters, being the whole amount of medical assistance; except the most rigid attention to diet prescribed, an equable temperature, and perfect quietness. Mr. Lizars attributes his success in the after treatment to timely bleeding, and certainly, I believe there is little good to be done without it, the pulse must however first indicate the necessity for it. In this case no blood was taken, the pulse never being otherwise than soft, and easily compressible; perhaps her advanced age might account for the want of energy in the circulatory powers; another proof of this was the remarkable fact already alluded to, that the pulse did not vary one stroke after the operation from what it was before. The tumour was freely injected with blood vessels; yet no vessels, either in the pedicle or in any of its adhesions, required the ligature; and the blood lost during the operation was very trifling, certainly not two ounces. Throughout the case there was an extensive secretion of urine, which at all times passed without the assistance of the catheter. I did not interfere with her habit of smoking as she had been long accustomed to it, and seemed to derive a little pleasure from the indulgence. In both these cases the ligatures connected with the pedicles were brought out at the very lowest point of the external incisions; those of Mr. Lizars were (it appears from his plates) brought out about midway between the umbilicus and pubes. This is a matter of mere choice; for my own part, I fancied the ligature would interfere less with visceral movements by being brought out lower than otherwise, which was my reason for adopting it. It is impossible to reflect upon the nature of these cases without admitting how very improper it would have been to put in practice the recommendation of Mr. Jeaffreson. The adhesions and solid parts of the tumours would have rendered such a mode impracticable; and the exposure of the viscera with the effects of a large incision, are not more dangerous than a mere puncture without exposure, now, beyond a doubt, abundantly proved by the cases of Dr. Macdowal, Mr. Lizars, and myself. When the prejudices against the operation shall have subsided, there exists not a doubt but that it must, as a matter of necessity, be admitted as a perfectly legitimate operation, and justifiable in every stage of diseased ovaria. It is to be hoped, too, that these operations will convince surgeons that the great fatality attending many capital operations, where *the peritoneum is concerned*, consists in driving the case to extremes; by adopting various modes of relief, *which failing*, produce greater *peritoneal irritation*, than when the knife is made use of, and fatal inflammatory action is often the result. I feel little doubt in attributing many deaths, subsequent to operations on the peritoneal sac, not to the undue interference with the knife, but to the means put

in practice before the knife is resorted to, for instance, the manipulations of taxis in hernia. Take the peritoneum in its quiescent state, the knife can then be used with much less pain to the patient, and those operations, so often fatal, and if successful, so critical in their after treatment, will become seldom fatal and extremely simple in their subsequent treatment. I shall now draw my remarks towards a conclusion; perhaps they may be considered too lengthy, the importance however of the cases is such, that the omission of even the slightest particular, might be the means of leading others to wrong conclusions. For those who may not have leisure to attend to it, I have thought proper to add a statistical account of such cases as have been treated by both operations, spoken of in these remarks, and which I hope will speak volumes in favour of the large incision.

Small Incision as practised by

Dohlhoff,	Germany,	1 successful,	2 fatal.
Jeaffreson,	Ipswich,	1 successful.	
King,	Saxmundham,	2 successful,	1 fatal.
West,	Tonbridge,	1 successful.	
Phillips,	London		1 fatal
		Total, 5 successful,	4 fatal.

Out of the five successful cases, two, viz., one by Dohlhoff, and one by King were cut merely, there *being no tumour*, consequently no violence was done to the viscera: the cases being those of simple scalpel wounds.

The Large Incision and Extirpation as practised by

L'Aumonier,	France,	1 successful.	
Dr. Smith,	Connecticut,	1 successful.	
Dr. Macdowal,	Kentucky	3 successful.	
Mr. Lizars,	Scotland,	3 successful.	1 fatal.
Dr. Clay,	Manchester,	2 successful.	
		10 successful,	1 fatal.

One of these successful cases was cut down upon, but no tumour was found, by Mr. Lizars. At the same time it ought to be stated that the fatal case (also by Mr. Lizars) had previously suffered from an attack of cholera, which, with equal probability with the operation, might be considered as the cause of death.

I have now faithfully detailed my own cases, and, as far as I could obtain them, the practice and opinions of others. I have endeavoured to shew, without prejudice to either, the comparative value of both operations. The puncturing of ovarian sacs I have not entered into, simply, because it is not a curative agency, but merely a means of temporary relief to be followed by still greater sufferings, with the certain prospect of a fatal termination. Even simple puncturing has been fatal in more instances than one. I am averse to puncturing, because it offers no hope of ultimate cure, and because at the places punctured, adhesions are effected, and by the alternate distension, and collapse of the sac, fresh adhesions are also formed in other parts.

The number of adhesions, however, can be overcome by the large

incision with great ease; and experience tells me the patient may recover from the separation of them, however numerous; and that without a bad symptom even in an aged person. But such adhesions, or even a suspicion that they may exist (and I venture to say no man can tell where they are not to be met with before operation) must at once condemn the small-incision operation. Time, and a few more opportunities will settle this question, I am confident, in favour of the large incision: to have room to be enabled to see that no unnecessary mischief is done, is the true principle of the large operation. Lastly, the being enabled *to see* the state, not only of the parts contemplated to be extirpated but the connecting viscera, and that *in time to retrace our steps if necessary*, with having only the simple incision to heal again, is a circumstance that cannot attend the minor operation.

[Several other cases are next related, some of which were unsuccessful; but in general, this important operation has been more successful than its formidable character would lead us to suppose.]

Concluding remarks.—After much reflection, I have no hesitation in stating my conviction that the extirpation of ovarian encysted tumours may be performed with comparative safety. And if the age be not too advanced, I believe the cases I have here given will fully prove that neither extent of adhesions, size of tumour, ascitic deposit, worn down constitution, nor peritoneal inflammation, should prevent extirpation being performed. The success of the operation is more than equal when compared with other capital operations in surgery. I would not advise, however, the peritoneal section so confidently in other tumours of the abdomen; still it is at all times a justifiable course where the patient earnestly requires it, and no other hope of prolongation of life presents itself. The exposure of the abdominal viscera, if the room be moderately heated, is attended with no bad consequences, nor yet a moderate loss of blood during the operation. The principal pain is confined to the first incision through the skin, and to the stretching of the pedicle whilst it is secured and severed. If the ligature is not drawn very tight, it will be much longer in coming away. I find it better *not* to let the interrupted sutures remain too long. I take every other out the third day, and the rest the day after, or at longest the fifth day. Thus much unnecessary irritation is avoided. Pain, after operation, is always controllable by a grain of mur. morphine. Some days after the pressure is removed from the abdominal viscera, there appears to be a tendency to diarrhœa, which, if not closely watched, and timely checked, may soon undo all the good that has been accomplished. Mere debility, arising *from the ovarian disease only*, before the operation, is more favourable than otherwise, and affords a good safeguard against peritoneal inflammation. I cannot conclude my remarks without correcting the statistical account of these operations as given in the preceding remarks, rendered necessary by additional operations.

Large incision, 3rd., by Dr. Clay, successful; 1 by Mr. Walne,

do.—Total, 12 successful, 1 fatal. Jeaffreson, small incision:—1 by Dr. Stilling Cassel, fatal.—Total, 5 successful; 5 fatal.

The above operations were for diseased ovaria only, in addition to which may be recorded two cases of anomalous and uterine tumours, of a very malignant character, which were attempted by the large peritoneal incision by myself, both of which proved fatal, the first from causes already mentioned, the last from the shock of the operation. I now leave the matter to the candid consideration of the profession, hoping those prejudiced against the operation, will examine fairly before they condemn.

Medical Times, Vol. VII, *Nos.* 160—164.

[Another very interesting case of this description is recorded in the Medical Gazette for Dec. 23, 1842, p. 437, by Mr. Walne; but as there is nothing particularly different from the cases and operations of Dr. Clay, we need only refer the reader to the paper. We would here also refer to a letter of Dr. Granville to the Editor of the Medical Gazette for January 13, 1843, p. 539, in which he affirms that he performed this operation by the large incision on the 27th of March, 1827, in the presence of several eminent practitioners, whose names he gives. A short account of it was published in the Literary Gazette, March 31, 1827. The abdominal incision was nine inches long, and the tumour larger than the human head, but which in fact, was *not* removed from the abdomen, in consequence of the numerous adhesions which were found to exist: but the extent of the incision and the safe recovery of the patient shew the comparative safety with which such an excision can be made. And we must add, for the sake of the character of this operation, that it would have been more advisable for Dr. Clay, in Mrs. Hardy's case to have followed a similar plan, and to have closed the incision when he found out the nature of the tumour he had to contend with. In Mrs. Hardy's case, the incision was thirteen inches, " the tumour presented very different appearances from encysted ovarian tumours, it was of a bright pink colour, hard as a piece of boiled liver, and composed of numerous small lobes with acute edges, similar to the lobes of the liver; the whole mass appeared upwards of twelve pounds in weight. I soon discovered, to my mortification, that its attachment was of a very broad character at its base, and highly vascular, no less than the full length of both fallopian tubes, and the greater part of the uterus itself formed a part of the tumour. I had now gone too far to recede, no alternative presented but extirpation of the whole mass." The consequence was what Dr. Clay and every other practitioner must have been quite certain of,—the speedy death of the patient. In this case, therefore, we must say that Dr. Clay was wanting in his usual discrimination and prudence; and if the same kind of thing occurs a few more times, it will bring discredit upon the legitimate operation of removing encysted ovaria. If Dr. Clay had stopped short like Dr. Granville, the patient's life would probably have been prolonged, and no one knows better than Dr. Clay the extent to which the peritoneal cavity can be opened with impunity. Except in this unfortunate case, we must say that

we have perused Dr. Clay's communication with infinite satisfaction; and we think the profession is under very deep obligation to him for the boldness and accuracy of his manipulations, and for the increased confidence with which we shall hereafter enter on the field of the operative surgery of the abdomen.

The following case shews to what extent wounds of this part of body may be carried without fatal consequences. It is related by Mr. Jerrard, of Honiton.]

Caroline Jummerhays, aged eleven years, received a wound from the point of a scythe in June last. The child was running at play, and fell as she passed a mower at work, the point of the scythe penetrating the left side of the abdomen, about three inches below, and the same distance from the umbilicus. I saw her about three hours after the accident occurred, when there was a heap of protruded knuckles of intestine about the size of a large fist. There was severe retching and a feeble pulse.

Having relaxed the lower limbs and raised the pelvis, I endeavoured, with both hands, to enclose and compress the heap of intestine, but could not reduce an inch of it, and during the attempt I could perceive fresh portions of the bowel protrude every time she retched.

I then tried to find the wound, which was so completely hid by the overspreading of the heap of intestine, that I could not see any portion of it. I next took hold of a portion of the bowel between the fore-finger and thumb of both hands alternately until I traced it (whether its upper or lower part I cannot tell) to the wound; then, with the point of each fore-finger alternately, I was enabled to return portion after portion, and in about half an hour succeeded, without enlarging the wound, in reducing the whole mass.

The wound, which was about three-fourths of an inch in length, was united by two sutures (which were passed through the cutis only), a strip of adhesive plaster, a compress of lint, and a bandage round the body. A dose of castor oil was given, which operated well in the night. The next morning there was considerable tenderness diffused over the abdomen. She was bled to sixteen ounces. In the evening of the same day, the tenderness continuing, she was again bled to the same amount.

After this the case went on well. The ligatures were stripped and removed about the tenth day. A strip of adhesive plaster, a slight compress of lint, and the circular bandage, were continued about ten days longer, when the wound was completely cicatrised.

Remarks.—I do not think that, without enlarging the wound, I could have succeeded in returning the intestine within the abdomen by any other method than that which I adopted. Every attempt to compress the mass seemed to excite the retching, and further protrusion, as stated above, could be distinctly perceived at each effort to vomit.

The retching recurred repeatedly during the reduction with the points of the forefingers, but the protrusion could be effectually prevented by the points of the fingers in the wound.

Provincial Medical and Surgical Journal, Feb. 11, 1843, *p.* 391.

52.—CASE ILLUSTRATIVE OF THE VALUE OF LITHECTASY.

By Thomas Elliot, Esq., Carlisle.

[It will be remembered that we referred to Dr. Willis' account of this new way of removing stone from the bladder in our fifth volume (p. 288), where it will be found by those interested in such matter. We are much pleased to see this operation successful in the hands of Mr. Elliot, of Carlisle, and hope that it may be found worthy of more extensive trial by our leading operators. As yet, however, we have seen but little notice taken of it. Before describing this operation as practised by Mr. Elliot, we will once more give the directions of Dr. Willis.]

Let the urethra be opened upon a grooved staff in the mesial line and behind the bulb to the extent of a few lines, as used to be done in the old operation of butonnière, or as Cheseldon did in his last operation, and every objection to the procedure is at once removed. To make such an opening, a lancet, in the absence of an implement with greater fixedness of parts, would perfectly suffice: and the urethra once open, we can dilate to the extent we please if we will but be patient. The vegetable tents of M. Guérin can always be procured, and nicely made would answer indifferently well to effect the needful opening. But an apparatus that is far preferable, that can be controlled to a nicety in its effects, and that is much more powerful than the tent, whilst its operation is still of the best kind, is the fluid pressure dilator of Dr. Arnott. This is an instrument which consists of a cylindrical tube of silk lined with the thin gut of a small animal to make it water-tight, fixed upon a canula which traverses its axis, and having attached to its outer end a syringe guarded with a stop-cock, by which it may be forcibly distended with water or mucilage. This instrument when empty exceeds but little in size the bulk of the canula or catheter with which it is connected, and is therefore easily introduced along the groove of the staff into the bladder. When there it can be gradually distended to its utmost limits, and being made of so tough a material as silk, it expands evenly and it is not liable to be burst by any degree of force that can be usefully employed. In Dr. Arnott's original case, thirty hours, during which the urine passed regularly guttatim by the canula, and the patient complained of no pain, but merely of a sense of distension, sufficed to accomplish dilatation to the extent necessary for the introduction of the forceps, and the easy extraction of a stone having the dimensions of a walnut. And this without risk for one moment to the patient! The wound in the perineum is a mere scratch; in itself and immediately, it is hardly so dangerous as the puncture that is made in venesection; ulteriorly it can by no possibility be followed by any evil or unpleasant consequence; the urine never even comes in contact with the raw surface,—the dilator is introduced, and immediately this fluid, so poisonous to open wounds, finds no passage save through the canula; before the dilator is again withdrawn, the fresh surface has become covered with coagulable

lymph, through which nothing can penetrate; and the stone being removed, the gap might be closed with a couple of points of twisted suture, and the urine made to come away at once by the whole length of the natural passage.—*Retrospect, Vol.* V., *p.* 289.

[Mr. Elliot, it will be seen, has deviated from the above plan "as it appeared to him that any advantage that could be gained by external incisions so very limited as Dr. Willis recommends would be much more than counterbalanced by the inconvenience that might possibly attend the introduction of the dilator, by the difficulty of securing any blood vessel in case it were necessary, and by the additional resistance that would be offered to the process of dilatation and to the subsequent removal of the calculus."

The patient, Thomas Irving, aged 17, stone mason, was in otherwise good health at the time the following operation was performed, and the stone was supposed to be of small size. Mr. Elliot procured from Mr. Weiss, of London, a dilator with stopcock and syringe, as described by Dr. Willis, and proceeded to operate as follows:—]

The grooved staff was introduced, and the stone felt and heard. The patient was then secured in the same position as for lithotomy, and the different steps were precisely the same as in that operation, until the prostate and membranous part of the urethra were exposed. The latter was opened close to the prostate, and divided cautiously towards the bulb, by carrying the knife along the groove of the staff, till an opening was made of sufficient size. The staff was then withdrawn, and the point of the forefinger of the left hand served as a guide for the introduction of the dilator, which, having been previously well greased, was passed along without any difficulty. A little warm gum-mucilage was next slowly injected into the instrument, until the patient slightly complained of the feelings of distention. On removing him from the table to the bed he complained of a strong inclination to make water, which was found to arise from the dilating part of the instrument having slipped into the bladder. It was emptied, partially withdrawn, and, when fairly within the neck of the bladder, again distended. In this position it was secured by attaching a long tape to it, and around the patient's foot, which again was fastened to the bed-post.

The patient did not complain above his breath during the operation, nor lose more than two or three drachms of blood. Another opiate was now administered.

In three hours time, a few teaspoonfuls of the mucilage were again thrown into the dilator until the patient complained. Urine had passed freely along that part of the tube which communicated with the bladder. He slept occasionally during the day, and the pulse was natural.

30th, at $8\frac{1}{2}$ A. M. Going on well; thought the distention as much as he could bear.

At 1 P.M. Slight sympathetic tenderness over the whole of the abdomen; pulse 104, irritable; uneasy from the distention; pain of

perineum on coughing; tongue clean and moist. Gave him an opiate, and sent word to my medical friends, who met me at 3 P.M. I then, in their presence, emptied the dilator, and withdrew it, at the same time passing my left forefinger along it into the bladder. I immediately felt the stone, which was of small size, and in shape resembled a coffee bean, being about four times its size. It was removed with the scoop and finger. The prostate was well dilated, and would have allowed the removal of a calculus of more than an inch in its shorter diameter. The uneasiness of the abdomen and perineum disappeared on the withdrawal of the dilator. A lithotomy tube was then left in the wound.

At 12, *med. nocte.* Urine had passed freely; pulse 96; tongue moist; no pain; had slept well. Ordered a dose of castor oil.

31st. Bowels not moved; had an enema; appetite good; says "he never felt better."

August 1. A. M. Complained of slight uneasiness, which disappeared on the removal of the lithotomy tube; going on well. At 10 P.M. was able to retain his urine, and could expel it by the wound.

At midnight passed about half-a-cupful by the natural passage. He was directed to lie on his right side, to favour its passage along the urethra as much as possible.

2d to 11th. Going on well; bowels regular; tongue clean; no constitutional disturbance; urine escaped freely both by the natural passage and wound; deposit of mucus in it; no pain; each night had taken a composing draught.

12th. Had a rigor.

13th. Complained af pain along the left spermatic cord.

15th. Left testicle swollen.

20th. Unable to void his urine by the natural passage at all; *Ardor urinæ*, and *gonorrhœa præputialis.*

24th. There was a discharge of a teaspoonful, or two at the most, of dark brown fluid, partly by the urethra, and partly by the wound. None of it had been kept. We supposed it to have been from a small abscess in the neighbourhood of the bulb, from the circumstances of the rigor on the 12th, and of no urine having passed along the urethra since the 20th, though it had escaped freely by the wound.

For a few days he had laboured under constitutional disturbance of a slight description, and for the first time since the operation had not rested well at night. After the escape of purulent matter, however, on 24th, he rapidly improved, and was able to walk out before the end of the month, occasionally calling at the surgery, and at other places still more distant from his home, For a short while, a few drops of urine occasionally escaped by the perineum when he was making the last usual efforts to expel it, until the wound finally closed. He has followed his employment (which is now that of a pipe-maker) from the 3d to 4th of October, and has improved much in appearance, being considerbly stouter than before the operation; and he says he would willingly submit to it again if afflicted with the same complaint.

I may mention that the patient was seen at different times by Dr. Lonsdale of Edinburgh, and by Messrs. Bowman, Kerr, and Linton of this city, besides those present at the operation.

Remarks.—1. It will always be advisable before hand to dilate the urethra and neck of the bladder as much as possible, by the introduction of bougies gradually increased in size, both to facilitate the passage of the dilator, and to accustom those parts to the presence of a foreign and irritating body.

2. Before operating, as well as during the process of distention, an opiate operates advantageously, by diminishing the sensibility, lessening any chance of shock, and relaxing the part.

3. The grooved staff should be large, and pressed against the perineum, not hooked against the pubis, as in lithotomy, care being of course taken to prevent its escape from the bladder.

4. The external incisions I would recommend to be free, since, if the prostate were unfit to undergo the process of dilatation, either from great rigidity, as is frequently found in old subjects, or from morbid irritability,—the operation could be at once completed by converting it into lithotomy. It will be unnecessary to repeat the reasons before given, for the preference afforded to this plan of proceeding.

5. The form of the dilator sent to me by Mr. Weiss might be improved by making it cylindrical, and not tapering towards each end. There would thus be no risk of its slipping from its position. The signs of its being properly placed are the feeling of distention and immobility. When it slips into the bladder, (as happened in this case, on removing the patient from the table,) the instrument can be pushed inwards towards the bladder, cannot be withdrawn, the tube is very moveable in all directions, and the patient experiences *tenesmus vesicæ* without any feeling of distention. It would be better if the dilating part of the instrument was of sufficient length to appear in sight, as the operator would be not only certain of its position, but able also to judge of the degree of tension when injecting the fluid,—a much safer criterion than trusting to the feelings of the patient, who might possibly submit without complaint to a pressure that would prove injurious. The instrument would be also improved by attaching a small stop-cock to the urine tube, and another to the tube that communicates with the dilator, as that which screws into the syringe is apt to slip when left in the tube. If the piston of the syringe was graduated, and the dilator perfectly water-tight, the surgeon would be able to judge exactly of the degree of distention of the prostate by the quantity of the fluid injected; and this would at once enable him to remove the instrument as soon as the dilatation was complete.

6. The length of time requisite for dilating will, of course, vary according to the resistance of the prostate and degree of force used; but I would strongly urge its being done at intervals, for, say quar- of an hour at a time, as less likely to cause irritation than if continued for a period of 30 or 40 hours, as has been mentioned.

When the dilator was withdrawn in this ease, two fingers eould be introdueed with the greatest ease along with the seoop.

The instrument, when fully distended, measured $4\frac{1}{2}$ inehes in eircumferenee, and is about the size of an hen's egg; and a stone of the same dimensions might have been easily extraeted.

Though twenty-five hours elapsed before the removal of the stone, it eould have been as easily effeeted, and the dilation must have been as eomplete, at the end of the third hour, sinee no additional fluid was thrown in after that time. This period was allowed to elapse, as I eertainly did not expeet to meet with so little resistanee, and be able to eomplete the operation in so short a time. The alterations in the length of the dilating part of the instrument whieh I suggested above, would have at once prevented this, nor would it have happened, eould I have been eertain that none of the fluid had eseaped where the stopeoek is inserted into the tube, and by that means known that the distention was kept up.

Though impossible to form a eorreet estimate of the operation from one ease, I would be inelined to give a deeided preferenee to this plan over that of lithotomy.

The patient, from beginning to end, eould never be said to be in danger, as any hemorrhage that might have taken plaee during the operation eould have been easily eontrolled. The presenee of the dilator effeetually prevents any oozing, as well as the injurious eontaet of the urine with the raw wound. There was no ehanee of shoek, no risk from peritonitis, infiltration of urine, inflammation of the veins of the neek of the bladder, nor any of the grave sequelæ that too often supervene on the operation of lithotomy. The only unfavourable eireumstanees that oeeurred during the progress of the ease, were the formation of a trifling abseess, as previously mentioned, and the existenee for a few weeks of a small fistula, whieh would barely admit a erow quill. The former would probably never have oeeurred, had not the pressure, as reeommended, been uninterruptedly eontinued; and the latter, whieh healed up soon on his taking exereise and gaining strength, is of too frequent oeeurrenee after lithotomy, to deserve more than a passing notiee.

Diffieulties, whieh have been already stated, may oeeur, viz. great irritability or rigidity of the prostate. In sueh eases no time has been lost, if the preliminary ineisions for lithotomy have been resorted to, and the prostate may be at onee partially divided, and the stone removed. But is this step advisable, or even justifiable where the dilator ean be employed? I should say not. The loss of a few hours, for the purpose of dilating, is, of eourse, of no moment, if the danger to the patient is lessened, or even removed, and whatever be the size of the stone, if the distention has been eomplete, it will be perfeetly aeeessible to the most effieient erushing instruments, and its perfeet and immediate removal rendered a matter of certainty.

This eonelusion, whieh Dr. Willis antieipated, is fully warranted by, and could have been realised in the preceding ease; and his able

advocacy of this operation, with his bold and judicious estimate of its merits, as compared with lithotomy and lithotrity, entitle him to the highest esteem of his professional brethren, and to the warmest gratitude of every sufferer whom the operation may relieve.

Edinburgh Medical and Surgical Journal, Jan. 1843, *p.* 137.

[To shew that the elasticity of the urethra is most remarkable in its membranous and prostatic portions, Mr. Bennett Lucas, in his clinical lectures at the Metropolitan Free Hospital, relates the case of a child of four or five years old, in whom the calculus readily made its way to the commencement of the corpus spongiosum, where it was felt through the integuments, but no force or ingenuity could make it advance further. It was cut down upon and removed, and the little fellow recovered in a short time. The calculus had constantly advanced to this situation and had as constantly receded into the bladder.—*Prov. Med. and Surg. Journal, Feb.* 18, 1843.]

53.—ON LITHOTOMY.

By James Syme, Esq, Professor of Clinical Surgery in the University of Edinburgh.

[When we remember the difference of opinion entertained on the extent to which the deep incisions in this operation ought to be carried, we ought carefully to weigh the arguments adduced by one whose views have been gradually changed by the force of circumstances, from one side of the question to the other. It seems that the most eminent men in our profession have differed, and do still differ in opinion on this subject; and we therefore feel it necessary only to lay those opinions before the profession which are published from time to time, without offering any lengthened comment upon them. The great question seems to be, to what extent may the incision at the neck of the bladder be carried? Mr. Syme began his career with the belief, that if the prostate were divided to a moderate extent, the aperture might be safely dilated without any further cutting. At first he was successful by proceeding thus, but meeting with some large stones, his opinion was shaken, and when force was obliged to be used, he found that the textures at the neck of the bladder, had suffered from inflammation and suppuration, and he came to the conclusion, that infiltration of urine was not more to be avoided than tearing the substance of the prostate. He found by careful dissection "That after all its surrounding coverings had been removed, the prostate when completely divided in the direction of the lateral operation, would not allow the passage of a spherical body exceeding in diameter one inch and a quarter. Unless, therefore, the prostate was completely divided, or the stone was so small as to admit of extraction through a partial incision of its substance, it followed that tearing of the glandular texture must take place, and in all probability prove fatal." Mr. Syme goes on to say:]

I then resolved to cut freely through the whole thickness of the prostate, and can safely affirm, that in no case has any bad consequence resulted from doing so. It is true that I have still met with unfortunate results, and these I wish particularly to notice, since without explanation they might naturally be attributed to the principle I advocate, while in truth they have attended departure from it.

In the ordinary way of performing the operation, a variety of circumstances, such as depth of the perineum, rigidity of the limbs, bulk of the prostate, or position of the staff, may impede and render imperfect the prostatic incision, any subsequent enlargement of which is not only difficult, but dangerous to the rectum. Through obstacles of this kind, though contrary to my wish, the aperture has proved incomplete, and I have, nevertheless, effected extraction, perhaps encouraged, in opposition to my own experience, by the strong statements of justly respected authorities as to the safety of dilating the prostate; but regret to say, that I feel more than ever confirmed in the dread of taking this liberty with the gland. The success of an operator affects merely the interests of his patient and himself; but the principle of an operation involves the welfare of the whole human race. If, therefore, the testimony which I have borne to the safety of cutting the prostate, and the danger of tearing it, has any effect in opposing the modern heresy which threatens to bring back, instead of the lateral operation, the painful process of the apparatus major, I shall feel consoled for the disappointments that have occurred in my practice.

It is usual to make the incisions of the perineum, with the knife which is to be employed for cutting the urethra and prostate, and which necessarily requires a length both of blade and handle, considerably greater than what belongs to the scalpel or bistoury chosen for the ordinary dissections of operative surgery. The instrument is, consequently, less manageable than the smaller one, which should certainly be preferred, especially as the next step of the operation is executed much more easily with it. This is laying open the membranous portion of the urethra, which I have known operators of great experience regard as the most difficult part of the process. With a small knife there can be no difficulty whatever, or what is worse, any risk of missing the groove, and injuring the neighbouring organs. The most certain way of attaining the object, is to shield the blade with the fore-finger of the right hand, and press it upon the groove, so as to make an opening into it, through which the knife, having been turned in the direction of its edge, may be pushed through the apex of the prostate. The operator then keeping the point of his finger in the hollow of the gland, should desire the curved staff to be withdrawn, and introduce a thick straight one, nine inches long, with a wide and deep groove, through the wound of the perineum into the bladder. Holding this sure guide in the left hand, raised so as to elevate the prostate, and withdraw it from the rectum, he may, with perfect confidence, introduce whatever instrument he thinks best for dividing the prostate. I would advise the

handle to be four inches, and the blade about three-and-a-half long, half-an-inch broad, straight on the back, except just at the point, which should be rounded off to make it run smoothly in the groove, and sharp on the edge, only to the extent of an inch and a quarter. The extent of incision may be regulated with the utmost precision, by the angle at which the knife is held in the groove; and if enlargement proves requisite, it may be safely effected by reintroducing the staff, and running the knife again along it, or using one of a larger size, with the edge rather thin than sharp.

Lond. and Edin. Monthly Journal of Med. Science, Dec. 1842, *p.* 1032.

[Such are the opinions of one of the best surgeons in this country, and when we see them confirmed by names so respectable as those of Cheselden, Desault, John Bell, Klein, &c., they ought to be seriously considered. But on the other hand we have Scarpa, Callisen, Le Cat, Dupuytren, Brodie, Stanley, Liston, Fergusson, &c., who recommend the plan of not cutting beyond the base of the prostate gland, so as to avoid dividing the fascia interposed between the pelvic cellular tissue and that more superficially situated. The opinion of Mr. Fergusson on this subject is described in an operation which was lately reported in the Lancet. He says:]

In anticipation of the somewhat formidable character of the operation, as well from the apparent depth of the perineum as the supposed size of the stone, I provided myself with all the requisites for such an occasion, in addition to the ordinary knife, forceps, &c., which are generally required. I had beside me a probe-pointed knife, to enlarge the wound in the neck of the bladder, should that be requisite; longer and more powerful forceps, to give more command over a large stone; a strong lithotrite to break the stone through the wound, should that be deemed necessary; and a syringe, with a tube, to wash the fragments out of the bladder in the event of the stone breaking.

Thus prepared, then, I proceeded with the operation, and having introduced the staff and tied up the patient in the usual manner, made the different incisions, passed my finger into the wound, then the forceps, with which I seized and extracted the stone.

Some of these steps are worthy of separate consideration, and I shall, therefore, bring them under your careful notice. Having on a former occasion referred particularly to the introduction of the staff and tying up the patient, I need not dwell on these points to-day. The external incision, however, was of unusual character, having been much longer than is usually recommended for this operation. It was fully six inches in length, and various reasons induced me to be so free with the knife in this part of the proceeding. The quantity of fat on the hips and perineum showed that the wound must be very deep ere I could reach the bladder, and the supposed magnitude of the stone indicated the necessity for a free external opening. There is a utility in such an incision which appears to me to have been in some measure overlooked; it is this, that after the

skin has been divided, although the point of the knife may have been thrust half an inch deep, when the edges of the wound separate the fat and cellular tissue seem to be on the same level as the skin; in other words, the perineum is made nearly half an inch shallower. This observation will be better understood should you ever see lithotomy performed with a short external incision: you will then see that instead of the edges separating, and permitting a ready access to the deeper parts, they will form a tight band over the forefinger of the left hand when it is thrust towards the neck of the bladder. You might remark that I began my incision higher up, i.e., nearer the scrotum, than is usually recommended, a plan which I invariably adopt when I cut into a deep perineum; but I wish you to understand distinctly that the wound here is carried through the skin only, and that the subsequent steps of the operation are all conducted at a considerable distance from this part. I thus, as I imagine, obviate any obstruction to my finger, such as that just referred to, and facilitate the use of the forceps as well as the extraction of the stone. I must caution you against limiting the steps to the upper part of the perineum; by doing so you would confine yourselves to the narrowest part of the aperture in the pelvis, and be so close under the angle of the pubes that it might be impossible to extract the stone. Although, then, I have no hesitation in dividing the skin near the scrotum, I am particular in keeping low down afterwards, both for the reason stated as well as for the sake of avoiding the bulb of the urethra, or the artery leading to that part.

When the skin and superficial cellular texture were divided, I then pushed the point of the forefinger of my left hand upon the part where I placed it on this drawing, i.e., between the erector penis and accelerator urinæ muscles, pressed it against the staff, introduced the point of the knife into the groove, about the middle of the membranous portion of the urethra, and then carried it onwards, so as to effect the internal incision. This part of the wound is small in proportion to the external, and in my own practice it is very limited indeed.

I consider that the textures about the neck of the bladder are more readily extended than the skin, and therefore that the deep parts of the wound can with facility be dilated to the extent requisite for the extraction of the stone. A wound of these parts of greater extent than this I deem additionally dangerous, whilst the free use of the knife on the skin is comparatively of no moment. The internal opening should, in my opinion, be made partly with the knife, finger, and forceps, for when the blades of the latter instrument are opened they have a considerable influence in this respect. I deem it almost impossible to extract a stone about the average size through what is called a clean cut in the neck of the bladder; and a clean incision of sufficient size to permit the escape of one of a larger diameter, I should consider highly dangerous. Here, for example, is a stone which you saw me remove lately; it is an inch and a half in its shortest diameter, and to permit its extraction without dilatation a wound of more than two inches and a quarter in length would have

been required. The stone in the present instance being nearly two inches in breadth as it came out, must have required a clean cut of nearly three inches; and in neither of these is there any allowance made for the thickness of the blades of the forceps, which should be always estimated in such calculations.

Observe the narrow blade with which I cut, and, when I place it in the groove of the staff, how very narrow the wound must be; the urethra is laid open, and a slight notch only is made in the left lobe of the prostate. This having been done, and the knife withdrawn, the forefinger of the left hand was pushed along towards the bladder with a degree of force sufficient to enlarge the wound by dilatation, perhaps even laceration, of some of the textures. In this instance the perineum was so deep that I could not (as is generally in our power) get the point of the finger fully into the bladder, and put it over the stone in such a manner as to draw it towards the neck of that viscus, and place it in a favourable position to be seized with the forceps. I could only touch it with the point of the finger, and could form no idea either of its exact position or size. The staff was now withdrawn, and the forceps were carried along on the back of my finger, which I was at the same time gradually withdrawing.

In such a case as this, from the uncertainty as to the exact size and shape of the stone, I could not make sure of seizing it at once with the forceps, and being unable to ascertain by the finger whether it was caught in the most favourable axis, I had to take my chance on both these points. Fortunately the stone was grasped in the second clutch with the forceps, and, as you saw when it was extracted, it had been caught most advantageously. Being conscious that the opening in the neck of the bladder was not yet of sufficient size to permit the passage of the stone, I was prepared for the necessity of further dilatation, and expected that I should accomplish this during extraction, by moving the forceps in different directions, and at the same time applying some considerable force in drawing them towards myself. As soon as the stone was seized, and after being satisfied that I had not included any portion of the wound, or of the bladder between the blades (to make sure of which I almost invariably turn the forceps and stone once round), I began the requisite movements to bring the stone out. I soon perceived, however, that the textures were not likely to yield except on the application of a greater degree of force than I deemed myself warranted in applying. I therefore (still keeping hold of the stone, and committing the charge of the forceps to an assistant) passed a probe-pointed blade into the wound, and made a slight incision in a part which seemed to offer the greatest resistance, and could at the same time be most readily approached. Here it was the left lobe of the prostate which I touched, but had any other part seemed to require the knife I should not have hesitated to apply it on any side of the wound or prostate. Now I took the forceps again, and at once felt that the parts yielded more readily, so much so that the stone was extracted without further trouble.

A tube was introduced to permit the ready escape of urine, for as

the surface of the wound was large, ragged, and deep, I thought it well to use this precaution in this instance.

There was no bleeding of consequence afterwards, and the case has gone on so favourably that I have little to say regarding the after-treatment. The tube was withdrawn on the second day, and, with the exception of a little opening medicine from time to time, he has required nothing on my part. The wound has been slow in closing, which is chiefly to be attributed to its great original size, as also to the circumstance that on the third day after the operation I tore open some of the adhesions to allow the urine to pass readily away. It is difficult in some instances to account for the tardy closure of the wound, for it certainly is not in all instances in proportion to the size of the wound. My friend Mr. Thomas Elliot, of Carlisle, has lately published a case of removal of a stone from the bladder by the operation of lithectasy (Edinb. Med. and Surg. Journal, No. 154), a proceeding similar, in some respects, to lithotomy with the apparatus major, by which the opening in the neck of the bladder is made by dilatation. Here, although the use of the knife in the deep part of the wound was so limited that a slight opening in the membranous portion of the urethra was all that was made with it, the aperture in the perineum was nearly a month in closing; while, on the other hand, it has often happened that even large wounds have entirely closed by the first intention, and that the urine has passed from the bladder by its natural course immediately after the operation.

You have now, Gentlemen, since the commencement of the session, seen me treat three cases of this kind on principles such as I am at present advocating. In the case of Edward Minister, ætat. 75, on whom I operated on the 15th of October, and extracted this stone, which is considerably above the average size, the opening in the neck of the bladder was not larger at first than to permit the entrance of the point of my finger; and, although considerable force was used in dilating and extracting, and the circumstances were otherwise not very favourable, the result was most satisfactory; the patient recovered without a bad symptom, excepting the great shock of the operation, which will happen in some individuals under any circumstances. In the boy J. Saul, ætat. 6, from whom I extracted this small stone on the 13th of the same month, similar force was used, though not to the same extent, and the patient left the house with the wound perfectly closed exactly three weeks after. This practice I have followed in other instances, which some of you may have seen in this house; and, as the results of any mode may reasonably be judged of by its success, you may be inclined to look favourably upon that which I have endeavoured to inculcate. I have seen patients die after this method as well as after free incisions. Some patients will die from the operation by whatever mode it is accomplished, yet I cannot but think that there is less danger so long as part of the prostate remains entire, than after the knife has been carried through this organ and along the tunics of the bladder.

[1] *Lancet, Feb.* 18, 1843, *p.* 742. (See also *Retrospect, vol.* V., *p.* 291.)

[We would also refer the reader to Mr. Elliot's case of Lithectasy in the preceding article, to shew the degree of dilatation to which these parts may be subjected with safety, provided sufficient time be given for the process.

The practice of Mr. Martineau, of Norwich, is frequently brought forward by those who advocate free incisions through the prostate, and amongst other eminent men, even Mr. Samuel Cooper, in his Surgical Dictionary, mentions the name and practice of Martineau as confirming the value of this mode of entering the bladder. We are disposed however to doubt whether Mr. Martineau ever did follow this plan, and we are borne out by some remarks of Mr. Dalrymple, who we believe had ample opportunities of witnessing the practice of this eminent lithotomist. Mr. Dalrymple observes,]

Mr. Martineau was too good an anatomist not to be aware of the extreme danger of implicating the deep pelvic fascia in the required sections; for it must be well known to all practical surgeons that the most serious evil to be dreaded after lithotomy was infiltration of urine into the cellular tissue behind and above the bladder. He (Mr. D.) had seen death occurring from this cause, where abscesses and suppuration extended almost as high as the kidneys in the loose cellular membrane. If the division into the prostate be carried, therefore, up to or beyond its junction with the neck of the bladder, it was almost impossible to avoid wounding that most important boundary. He (Mr. D.) had witnessed many of Mr. Martineau's operations, and was convinced that it was never his intention to carry the wound of the prostate, by the knife, beyond the middle of that gland, and that the opening was dilated and extended by the blunt gorget, the favourite instrument used in the Norwich operation. The incision practised by Mr. Martineau in *cutting out*, was for the purpose of laying the deep and superficial sections into one open and even wound, giving a free and dependent outlet for the urine, after the operation. Mr. Martineau, also, never attempted to heal the wound by the first intention, and although a pledget was applied to the perineal wound at the moment of carrying the patient to bed, yet that was a mere form, and one of the relics of the old school, of dressing the wound. The same form of operation was practised by his (Mr. D's.) father, in upwards of one hundred cases, and the only patient who had died of hæmorrhage was one in whom the cutting gorget had been used, an instrument which he never resumed.

[The above remarks were made by Mr. Dalrymple in answer to Mr. Mayo on the other side of the question; and then follows in the discussion, the important opinion of Mr. Quain, so that we think upon the whole, the evidence in favour of the smaller incision at the neck of the bladder, decidedly preponderates.]

Mr. Quain observed that Mr. Mayo had laid down the general rule, that in lithotomy the external incision should be large and the internal a free one. He (Mr. Quain) agreed with the first but dissented from the second. When he commenced to perform lithotomy,

and had to make up his mind as to the best mode, he arrived at the conclusion, which had been supported by everything he had since observed, that so far as the operation itself was concerned, those surgeons met with the most favourable results who cut the prostate to a small extent, insomuch, indeed, that the success might almost be said to be in direct proportion to the smallness of the incision through the gland. It was stated in the paper that the author, after dividing the superficial parts, passed the knife through the prostate (the edge of the instrument being directed towards the operator) and divided the gland forwards, cutting to the membranous part of the urethra. This plan seemed to him (Mr. Quain) to be one of very great difficulty. It was no easy matter for the surgeon to open the membranous part of the urethra, and introduce an instrument through it, without the help of a staff, as was well known to those who had operated in cases of infiltration of urine with impassable stricture. To feel the prostate at the bottom of the wound, and to direct a knife into the staff through that body, must be exceedingly difficult to accomplish. Moreover, he did not understand what advantages the author of the paper believed this plan to possess over the comparatively easy one of introducing the knife into the staff, in what was called the membranous part of the urethra, where the instrument might be felt, and then directing it onwards in the groove. As to the manner of dividing the gland, he believed it was best to make merely a nick, or a very short incision, with the knife, and then, in ordinary cases, to trust for the enlargement of the wound to the finger. It was objected that a lacerated or jagged wound was thus produced. This objection, however, was not well founded. The prostate was fully and evenly divided, incised, as it were, by the finger, at the same time that the fascia behind the gland and the bladder were untouched. Agreeing with gentlemen who had spoken as to not cutting the fascia, he was unwilling to refer to that subject without alluding to Scarpa, who, he believed, was the first to connect that membrane with the explanation of the evils resulting from a free incision towards the bladder. But he was disposed to think that all the evil resulted from the division of the bladder, and that the fascia marked the part, the neck of the bladder, which it was unsafe to divide. He had seen one case in which death occurred after lithotomy, where the prostate was cut through its whole length, and the fascia and the neck of the bladder were divided to a small extent. Urine had escaped through an opening behind the fascia, and was diffused around the bladder. When the bladder was divided at all, the edges of the incision did not remain in contact, but in consequence of the nature of the tissues they gaped like a divided muscle.

Lancet, Dec. 14, 1843, *p.* 481.

[Whilst dwelling on this much disputed question, we would refer the reader to an interesting paper in the Lancet, by Mr. Bryan, of Great Russell Street, London, who has introduced a new modification of the staff used in lithotomy, which may enable the surgeon to

cut, divide the prostate, and enter the bladder, without being ignorant how far his incision has extended. Mr. Bryan says:]

Authorities differ greatly, both as to the direction and the extent of the wound in the bladder; and even supposing the question to be decided, there is no instrument that will enable the operator to make his last incision with exactness and freedom. Can the operator of the present day divide the neck of the bladder with precision to the extent of four, five, six, seven, or eight-tenths of an inch, namely, make exactly the extent of wound he may consider desirable, whether the perineum be deep or shallow, the parts rigid or relaxed? As to the direction of the incision, the neck of the bladder has been divided in all directions, and the student, very naturally, but very incorrectly, may conclude that the direction is of little importance. In those operations which I have seen performed by the knife, from observing the direction of its edge, when passed forward into the bladder, I had formed the opinion that if an opening to the extent of three-quarters of an inch were made, the prostate was cut through and the vesiculæ cut into. This led me to examine, at every opportunity I had, the wounds made in those subjects which had been used to exemplify to surgical classes the manner of operating with the knife. In every case which I met with I found the prostate completely divided and the vesiculæ sliced into, although the incisions had evidently been made according to rules taught in the schools of surgery. If the incision through the neck of the bladder be made to the extent of three-quarters of an inch, downwards and outwards, parallel to the external wound, the prostate will be completely divided and the vesiculæ wounded. With regard to the vesiculæ seminales, if it be necessary to divide completely the prostate gland, this may or may not be the best direction to cut in; but it is as well to know what is cut and what is not.

With reference to the last incision in the operation of lithotomy, there are a few mechanical considerations which are positive, however opinions may differ as to free internal incisions, or dilatation without incisions or with very small ones. There are two things only to be considered: cutting and dilating, If you cut through the prostate, you cannot, with impunity, apply force in dilating the wound. What is there to antagonise the neck of the bladder and the substance of the prostate? Merely the coats of the bladder itself. If it be wished to stretch the wound this may be done to a little extent, but it is the bladder at the external end of the incision that must give way. The neck of the bladder and the tissue of the prostate gland will not dilate without something to bear a counter-strain. If there be free cutting, say one inch or much less, in the directions usually adopted, there is an end to dilatation. A cut of three-quarters of an inch in the right direction, with cautious dilatation, will give a very wide opening. By cutting another quarter of an inch beyond this do you not lessen the size of the opening, unless you introduce another element, namely, *tearing ?*

[By examining the natural situation and size of the prostate, the

vesieulæ, the vas deferens, and the internal orifiee of the urethra, we shall see that "in dividing the prostate and neck of the bladder, if the eut be made in that direetion in which the largest wound in the prostate may be obtained without eompletely dividing it, the incision must be direeted more outwards than downwards, caleulating by the plane of the integuments, and eonsiderably aeross the external wound."]

Horizontally outwards the prostate admits of an ineision of half an inch, leaving a similar portion undivided. A seetion of one-third of an inch, having an inclination upwards, extends beyond the gland. Wounds by which the prostate is not completely divided have their edges nicely adapted in the dead subject; but if you eut beyond the prostate the loose ecllular tissue has not power to retain the cut surfaces in just apposition. This must apply much more to the living subjeet.

In the dead subjeet, the longest possible ineision in the prostate, without eompletely dividing it, is about eight or nine-tenths of an inch. This wound, together with the neek of the bladder, will streteh out so as to allow a round body of more than four inches circumference to pass withour tearing.

If you pass the finger into the rectum of the living male subjeet, whcn completely beyond the sphineter you find the rectum expanded behind it, and extending to the right and left, and even a little upwards on each side of the prostate gland. It is not of a round form, but has a slight depression in whieh the prostate lies, and is flattened betwecn thc distended bladder above and the levator ani below, thus extending laterally.

It is this shoulder of the reetum, if I may so term it, which is most in danger, and which the unpraetised operator should bear in mind. It is above the level of the anus as the patient is plaeed for the operation.

In thc operation in question, the first ineisions are made under the guidance of the eye, but the ineision through the prostate is made at the bottom of a deep, frcely-bleeding wound, whcre all the parts are soft and yielding, and possess but little defined outline to serve as a guide.

It is, I have little doubt, the inability of making the wound in the bladder with preeision whieh has not only occasioned the invcntion of the gorget, bistouri caché, and othcr instruments, but has also givcn rise to the great diffcrenee of opinion and practice whieh prevails in the sehools. The vagueness and indefiniteness of our information on this most important point partakes of the charaeter of the wound itself.

The late distinguished Sir Astley Cooper has observed, "In deep pcrinci, when operating with the knife, you often think thc instrument has complctely entered the bladder when probably its point has scareely reaehed the verumontanum; you are at a loss; are quite at sea, and cannot tell whether it has entered the bladder or not,"—"In old persons, in whom thc prostate and bladder are often diseased, and all the parts extremely rigid, the knife makes scareely

any impression, and the opening through the prostate is exceedingly small, while, on the contrary, the external wound will be of considerable size; which may be accounted for from the obvious fact that the force is greater at the hand than at the point of the instrument."

The gorget is used with the intention of making the cut into the bladder of a definite size; but it does not answer this purpose, and is on many accounts an objectionable instrument. Suppose its beak placed in the groove of the staff; the staff gives it the direction in which it must pass into the bladder, while the gorget itself is inclined towards the staff at the instant it is carried forward; thus, as it does not cut exactly in the direction of its edge, force is required to push it through the prostate. All that keeps the prostate steady in front of the gorget, all that prevents the prostate from receding before the force of the gorget, is the delicate urethra and that portion of the deep perineal fascia which is reflected backwards over it and the prostate to the bladder. The gland offers a rounded surface to the gorget, its slender elastic attachments cannot hold it steady; when you push the gorget forward the gland recedes from you, till at last the gorget partly cuts and partly tears it—it gives way suddenly; you enter the bladder abruptly, and are fortunate if you have not torn the urethra or transfixed the bladder. The prostate is too moveable for a gorget to divide it with any precision as to direction, and, as to the size of the wound, it is most uncertain: there may be a cut equal to the breadth of the gorget, or, the parts yielding by stretching, the cut may not be one half its breadth.

In the hands of a practised operator it may cut pretty well, but then its direction must be made parallel to that of the staff. It immediately becomes a dangerous instrument; for unless the gorget is inclined towards the staff it may slip from the groove and pass in a wrong direction. The proper path for a gorget is a tough one; the dangerous paths are very easily and very often slipped into. The operator has two impressions to attend to; but the force required to plunge the instrument into the bladder prevents his judging well whether the beak is in the groove or not; the stronger impression incapacitates the hand from feeling the weaker impression.

The eminent authority quoted above says, in his surgical lectures, "I have known the accident of the gorget slipping and passing between the bladder and rectum at least a dozen times, and in each case the most lamentable and fatal consequences ensued."

There is no need of argument to prove that to divide the neck of the bladder with precision is difficult; the great number of instruments invented and used with the intention of accomplishing this end are, alone, sufficient proof. None of these inventions are found to answer the purpose intended; they make wounds of a most uncertain size and direction; they have proved most dangerous instruments.

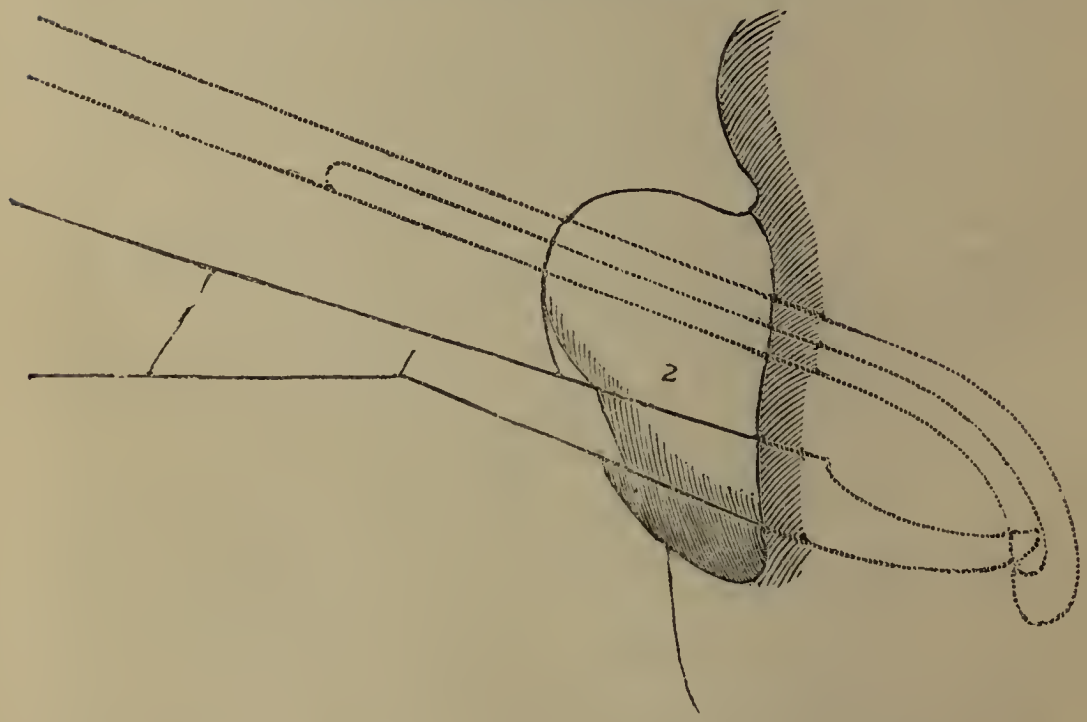
These considerations led me to regard the staff as the instrument which should be modified in order to regulate with precision the size of the deep internal wound, and thus add to the freedom and clean-cutting of the knife that precision so much desired.

The annexed figure represents the staff which I propose, and a slight modification of the common scalpel suited to it, together with a side view of the parts principally concerned in lithotomy, intended to illustrate the operation.

The staff is straight to within one inch and a half of the end, which is curved, so as to pass readily through the urethra into the bladder. The groove is on the concave side; it should extend so far upon the curve as will bring the edge of the knife to a distance from the straight part of the staff equal to the length of the incision intended.

The knife should be furnished at the extremity with a slight shoulder, so as to run readily to the end of the groove. The back should be thick near the handle, as the blade at this part should be very narrow, so as to bring the edge parallel to the staff, although the back may diverge a little from it. The edge should cut from the extremity, to the extent of one inch and a half along the blade, or a little less; the rest should be blunt to the handle; it should be deeply notched at the back at the end in order that it may the more readily enter the membranous part of the urethra. The staff which I first had made throws the knife outwards and downwards, and limits the wound to the size represented in the figure, and in fifty cases,

The staff and scalpel, and side view of the prostate gland, and extent of the incision made through it.



with the same staff, the wound will not vary the tenth of an inch. In addition to affording perfect precision to the wound in the bladder, this staff will also protect it, whether distended or nearly empty,

from all chance of being wounded by the knife when within its cavity, and however deep the perineum may be, the operator may make his incision without the least fear of going too far or not far enough. By its aid the last incision may be made with as much ease and precision as the first.

As I have previously remarked the schools differ on the subject of the propriety of dividing the prostate completely or only very partially. The following conclusions may, however, be legitimately deduced from a consideration of the form of the parts concerned in the operation:—

At an angle of 45°, calculating from the axis of the staff and the mesial plane, *an incision of three-quarters of an inch may be made without completely dividing the prostate.*

An incision more horizontal than this must be much more limited, more particularly for this reason: *when the handle of the straight staff is depressed, or when the curved staff is elevated against the pubis, the central portion of the prostate is raised more than the lateral portions, and thus a very small horizontal incision extends through the gland. It is for this reason, also, that a cut equally outwards and downwards divides the prostate in the direction admitting of the longest incision.*

A cut outwards, at an angle of 45° from the straight staff, is also in the firmest part of the gland; one more downwards extends into the fissure which divides the lateral from the third lobe, and also involves the vesiculæ or its duct, or even the vas deferens.

If the prostate ought to be divided in the direction admitting of the longest incision without complete division, then *there is but one proper direction to cut in, and all others are more or less faulty.* If the cut does not extend beyond the prostate the edges of the wound remain well adapted, being supported by the texture of the gland. If the cut does extend beyond the prostate, the edges of the wound cannot be expected to adapt themselves better than would those of a wound in an intestine, or of a cut through the lip. The same consideration applies to the urethra; if opened close to the apex of the prostate it remains, by the firm support of the prostate, a comparatively closed canal.

The staff proposed should be used in the following manner:— While the first incisions are made to reach the urethra at the apex of the prostate, it may be elevated towards the pubis, the groove being directed outwards. The handle should then be depressed as much as practicable, the groove directed downwards and outwards (at an angle of 45°, calculating by the axis of the staff and the mesial plane), and the curved portion should be carried back freely into the bladder, as in the sketch. The point of the knife being introduced into the groove, and its edge directed in the same plane as the staff, it should be thrust forward to the end of the groove, the handle of the knife being at the same time brought as nearly as practicable into parallelism with the staff, which should not be moved during this incision, but, on the contrary, held steadily.

The steps of the operation may be thus described:—

The first incisions, those made to reach the membranous part of

the urethra, divide a triangular space, the base towards the integuments, the apex directed upwards, inwards, and backwards, and arching round the bulb to reach the urethra just anterior to the deep perineal fascia and the apex of the prostate. These incisions constitute the first stage of the operation. Directed by the finger, the end of the knife should be placed in the groove of the staff, its edge turned outwards and downwards; then, a simple thrust forward makes, with exact precision, the extent of wound intended, dividing the parts in the space marked 2. This is the second stage. The knife should be withdrawn along the groove, the finger placed in the wound to find if there are any bands of muscular fibre or fascia which require division; if there are such, they must be put on the stretch by the finger and divided by light touches of the knife.

Lancet, Feb. 11, 1843, *p.* 701—706.

54.—LITHOTOMY IN AMERICA.

Dr. Nott, in a paper on lithotomy, mentions the astonishing fact of Professor Dudley of Kentucky having operated on 153 cases, and lost only four of them. This extraordinary success is attributed to the great care taken in preparing the patients for undergoing the operation, the dexterity of the operator, and the pure air which the patients breathe at Lexington, where Dr. Dudley resides. Dr. Nott recommends the breaking all large stones previous to extraction, and states, that, in his practice, the mortality is diminished in consequence. He employs rather a novel means of removing all the smaller fragments from the bladder,—viz. injecting a stream of water into the bladder by means of a wide catheter passed through the urethra, while the patient is sitting over a chamber pot. Every fragment is thus washed through the wound.

Edin. Medical and Surgical Journal, Jan. 1843, *p.* 228.

55.—CASES OF CLEFT PALATE SUCCESSFULLY OPERATED ON.

By James Cusack, M.D., Surgeon to Stevens' Hospital, Dublin, &c.

[The first of these cases was operated on by Dr. Cusack, the other two by Sir Philip Crampton. In the first case, Dr. Cusack found a complete congenital fissure of the soft palate. The act of opening the mouth produced as usual a separation of the parts, but these approximated during deglutition. As the chief difficulties of this operation often depend upon the irritability of the patient, Dr. Cusack recommended that for some months before the operation the patient should accustom himself to retain his mouth open, and diminish the irritability of the parts by the frequent introduction of his finger. This plan answered, and in time the patient could retain his mouth open without uneasiness, and bear the application of his finger almost as well as to any other part of his body.

The operation was performed as follows:]

With the aid of a simple forceps and curved needles I passed three ligatures, at equal distances from each other, through the soft palate, the lowest being at the base of the uvula; I then introduced a double edged knife about a line from the margin of the cleft, and the same distance from the apex of the triangle, on each side in succession, terminating the incisions above. As he had not breakfasted, we allowed a short time to intervene during which he was supplied with some light nutriment; the edges of the wound were then approximated, and the ligatures tied with a surgical knot; one of these having been cut, as it was supposed, too closely, unravelled, and was replaced.

I saw him at three o'clock in the afternoon: there had been some slight hemorrhage, and he complained of a teazing cough. At six o'clock in the evening I received a note from him to say that the ligatures had all unravelled. I visited him, in company with Mr. Rumley and a pupil, when I found that his statement was in a great measure correct. I cleared away a coagulum, which was the cause of the irritation, and without difficulty introduced two ligatures, at points more remote from the margins of the fissure. I then fed him, and afterwards brought the edges into contact, securing each ligature by a simple knot. So far from being disappointed at this accident, I felt pleased at its occurrence, as I flattered myself I had gained nearly twelve hours, and had remedied the undue pressure of one of the ligatures, which appeared to act injuriously on one section of the uvula.

From this period no untoward symptom occurred. On the fifth day, I cut loose the ligatures, and found that he had a perfect palate; the only remaining defect being a bifid uvula, a condition, which is commonly met with in persons who articulate with perfect distinctness.

I shall now conclude by a few remarks in his own words:—"The operation was not at all, comparatively speaking, painful; the cutting part I scarcely felt, and the presence of the ligatures was by no means distressing, except during the act of swallowing or eructation. From my own sensations, I think that by far the best plan would be to make the incisions in the first instance, and to defer the application of the ligatures until all bleeding has ceased, as I experienced much uneasiness and irritation from the presence of the coagulated blood which trickled from the margins of the wound. I now find the defect in my voice and speech considerably removed, and my articulation progressively improving each day; and I declare, in conclusion, that I would readily undergo the same operation, for similar benefit, if necessary.

[Sir Philip Crampton also operated on two cases, one on a fine boy of twelve years of age, the second on a young lady of sixteen.]

The peculiarity in the treatment of these cases consisted, first, in the manner of securing the ligatures; secondly, in the management of the patient after the operation. The difficulty of tying the second knot on the ligature without suffering the first to become opened by the strong retraction of the edges of the fissure effected by the muscles of the palate, has always been acknowledged. This diffi-

culty, however, was effectually removed by an ingenious suggestion of Mr. Maclean's of Stephen's-green: after the ligatures had been passed through the palate at the distance of one quarter of an inch from the cut edge of the fissure, and brought out at the mouth, their ends were passed through a small perforated metallic bead, such as are used in making purses; the bead was then pushed down along the ligatures, closing them as it descended, until it touched the approximated edges of the wound; it was then compressed by a pair of strong, blunt-pointed forceps, and the ligatures were thus firmly secured without a knot at the required degree of tension. The other and most important peculiarity in the treatment consisted in allowing the patients an ample supply of soft food during the whole period of the treatment. Boiled bread and milk, custard, soup, and jelly, were given twice or thrice a day, and the patients were not confined to their beds. Sir Philip Crampton conceived that the total privation of all nourishment for five days, so strongly insisted on by M. Roux, was not only unnecessary, but in the highest degree unfavourable to the successful issue of the operation. Indeed if such were a necessary condition to its success, the operation must be limited to the few who had sufficient moral courage to endure so protracted and painful a fast, and sufficient strength of constitution to bear it with impunity. It might be concluded, *à priori*, that the absolute privation of all nourishment, solid or fluid, for five days, must cause, even in the strongest persons, a state of constitutional disturbance highly unfavourable to the establishing the healthy process of union by the first intention; and that such and even more serious consequences have resulted from the practice, is proved by the unquestionable testimony of MM. Mannoury and Thore, interns of the Hôtel Dieu, where M. Roux's operations were performed.

In both of the patients operated on by Sir Philip Crampton the voice and articulation have been considerably improved; but a considerable time must elapse before the full amount of the benefit which may be obtained from the operation can be ascertained.

Dublin Journal of Medical Science, Jan. 1843, *p.* 322.

56.—*Improved Treatment of Hydrocele.* It need scarcely be recalled to mind that in the operation for hydrocele, after the serum has been discharged through the canula of the trocar, it is usual to inject an irritating fluid in order to induce an adhesive inflammation in the parietes of the tunica vaginalis. The inflammation somewhat subsides after about the fifth day; but a month commonly elapses before the whole quantity of the injected fluid is absorbed and a cure effected. On this somewhat tedious course of practice M. Lisfranc has made the following improvement:—On the sixth day, after the use of a vinous injection, he makes a second puncture, for the purpose of emptying the tunica vaginalis of all the accumulated liquid, thus sparing nature the task of its absorption; and by these means he alleges that a cure can be completed in less than half the time occupied by the usual method.—*Bul. Thér.*—*Lancet, April* 1843.

57.—OPERATION FOR ANEURISM OF THE EXTERNAL ILIAC ARTERY, AND USE OF MR. TRANT'S ANEURISMAL NEEDLE.

By O'B. Bellingham, M.D, One of the Medical Officers of St. Vincent's Hospital.

[In this case the aneurism was of about three months duration. The tumour was about the size of a section of a moderate-sized orange, seated above Poupart's ligament, and extending about half an inch below it. A very strong impulse was communicated to the hand, but no *frémissement;* immediately below Poupart's ligament, however, there was slight *frémissement*, and on applying the stethoscope a loud simple *bruit* was heard. It was determined to place a ligature on the common iliac artery, and the operation was proceeded with as follows:]

The patient being placed on his back, slightly inclining to the sound side, having the thorax elevated, and the thigh bent upon the pelvis, I commenced the operation (assisted by Sir P. Crampton, Mr. Cusack, and Professor Porter) by a semicircular incision, beginning on a line with the last rib, and terminating nearly opposite the anterior superior spinous process of the ileum, and about an inch and a half internal to this process; its length was about five inches, the concavity towards the umbilicus; by this the integuments and superficial fascia were divided; the fibres of the external oblique muscle were then incised in the same direction, and next those of the internal oblique; by which the transversalis muscle was exposed. A cautious incision was made through the fibres of this muscle at the lower part of the wound, and a director endeavoured to be introduced under them; this muscle, however, was found to be considerably hypertrophied, being double or treble its natural thickness. On arriving at the transversalis fascia it also was found to be considerably increased in thickness, and presented almost a tendinous character; a portion of it was raised with a forceps, and cautiously incised; a director was then introduced, and an incision made sufficient to admit the finger, upon which this fascia was divided by a probe-pointed bistoury, both upwards and downwards. No artery was divided in this part of the operation requiring a ligature; the bleeding appeared to be altogether venous. The peritoneum was now very cautiously raised from the subjacent iliac muscle, by insinuating the fingers behind it, and this proceeding appeared to give much more pain than was expected. As the peritoneum was detached, Mr. Porter, with his hands in the wound, drew this membrane and the intestines towards the opposite side; the separation of the peritoneum was continued until my finger reached the upper extremity of the external iliac artery; and the expected difficulty from the protrusion of the intestines was much less than had been anticipated.

After a short time I succeeded in getting a view of the vessel, and as it appeared to be perfectly healthy, its sheath was opened to a small extent by means of the blunt extremity of a director; and Mr. Trant's aneurism needle was then passed under the artery, from

without inwards, without much difficulty; and here the advantage of his instrument was fully proved, for as soon as the eye of the needle appeared at the opposite side of the vessel, the ligature was drawn up by it, which owing to the depth of the wound and the distance of the artery from the surface, must have been attended with delay and difficulty had the common aneurism needle been employed: a single silk ligature was used, and as soon as it was tightened the pulsation in the aneurism ceased. The edges of the incision were then brought together by the interrupted suture and adhesive plaster. The operation was completed in little more than thirty minutes.

The patient was then placed in bed, with a pillow under the ham, in order to keep the thigh flexed upon the pelvis; and sixty drops of laudanum were administered. He complained of a sensation of cold in both lower extremities, and to the hand they felt colder than natural; this probably arose from the unavoidable exposure during the operation. Additional covering was employed, and jars containing warm water were directed to be applied to the soles of the feet.

[The ligature came away on the twenty-fourth day without any hæmorrhage, and the patient ultimately did well. Dr. Bellingham remarks that the incisions were made with a view to apply a ligature to the common iliac artery, as it was supposed that the external iliac was not sufficiently sound between the aneurism and the bifurcation of the former vessel, and at the moment, he was under the impression that the ligature had been placed upon the common iliac.]

The present case appears to be the only one in which the external iliac has been tied for aneurism of this vessel, or in which a ligature has been placed so close to the bifurcation of the common iliac. In fact most writers lay it down as a maxim (in placing a ligature upon a large vessel) to tie it at a sufficient distance from a collateral branch, to allow of the formation of a coagulum above the ligature; the internal coagulum being supposed to have a material share in the process by which the artery is closed, and hæmorrhage more frequently following the operation when a ligature is placed close below, than at some distance from a large collateral branch. Indeed Roux (in his parallel between English and French surgery) has related a case which he witnessed in London, where the external iliac artery was tied by Sir A. Cooper, and the patient died of hæmorrhage a fortnight afterwards; on examination it was ascertained that the obturator artery (which usually arises from the internal iliac) proceeded from the external, and arose immediately above the point to which the ligature had been applied. However, though the nearness of a collateral branch may interfere with the formation of a coagulum, it does not necessarily prevent the adhesive process from closing up the vessel. Mr. Travers, in the sixth volume of the Medico-Chirurgical Transactions, concludes, from a series of experiments which he performed, "that after the proper application of a ligature the adhesive process is established in an arterial trunk in equal time, whether its branches are contiguous or remote." Indeed the reco-

very of the patient in this case shows that a large artery may be successfully tied at the distance of half an inch from the point at which a branch nearly of equal magnitude comes off.

The aneurism needle is generally directed to be passed from within outwards, in order to avoid the vein; in the present case, however, the vein was not seen at all, and the needle was passed with great facility from without inwards; and, as I have already observed, the hooking the loop of the ligature, owing to the depth of the wound, and the distance of the artery from the surface, would have been necessarily attended with delay and difficulty, had I not employed Mr. Trant's aneurism needle; the great advantage of which instrument consists in its seizing upon the ligature, although completely out of sight, as it is so constructed that it can take up nothing but the ligature, and it cannot fail to draw it up, though the wound may be full of blood at the time.

Dublin Journal of Medical Science, Jan. 1843, *p.* 327.

[We subjoin a sketch of Mr. Trant's aneurism needle, and must refer the reader for a fuller description to the Dublin Medical Press for November, 1839.]

" The aneurism needle, when about to be used, is arranged as shown in figure A. The ligature is seen held in a direction parallel to the needle, for about one-fourth of an inch near the point, and at right angles with an imaginary line drawn from the point where the hook issues from the handle, meeting the ligature held in the needle.

" Figure B shows the instrument as having been passed under the artery; the spring-hook is supposed to have been projected to the point of the needle, and having seized the ligature held at right angles, the operator is understood to be in the act of drawing up the ligature to him by the spring-hook, controlled by a stud made fast to the stem of the hook, and passing through the handle of the instrument."

58.—REMARKS ON SEMINAL AND OTHER DISCHARGES FROM THE URETHRA.

By Benjamin Phillips, Esq., F.R.S., Surgeon to St. Marylebone Infirmary, and Lecturer on Surgery at the Westminster Hospital School of Medicine, &c.

[Eleven years ago Mr. Phillips, at the suggestion of M. Lallemand, first applicd lunar caustic to the mucous membrane of the urethra o check involuntary seminal discharges.]

Involuntary discharges are for the most part, if not altogether, caused by irritation set up in or about the ducts connected with the testicle. In some cases it may be doubtful whether the irritation by which they are excited may not have its seat in the rectum; primarily there is no doubt it may, but other cases would lead to the supposition that secondarily the mucous membrane of the urethra itself may suffer, and that, when the irritation in thc rectum has ceased, that of thc urcthra may still kcep up the mischief.

There are particular modes in which the urethral irritation is commonly excited; among these masturbation holds a prominent place: by this practice, the constant excitement of the seminal ducts ends by establishing a permanent irritation there: it may likewise happen from excess in sexual intercourse. Next to this cause we may range gonorrhœa or glccty discharges, which, from timc to time, cstablish chronic inflammation in the vicinity of the orifices of the cjaculatory ducts. Then follows stricture, which by opposing an obstacle to the free passage of urine, ultimately causes the development of a morbid condition of the mucous membrane between the stricture and the bladder. The same state of these organs may result from irritation within the rectum; that irritation may be caused by fissures or piles, or by the presence of ascarides.

It is said that other causes are capable of inducing the same disordered action of the sexual organs, but as I profess in this place merely to point out such as have come within my own observation, I do not propose to consider others.

Thc mode in which the irritation, once set up around the orifices of the ejaculatory ducts, acts, is very much the same as obtains upon the application of irritation to the mouths of other ducts; it solicits increased action in the organ with which they communicate. Irritate the bladder, and the kidneys are stimulated to increased action; irritate the conjunctiva, and the lachrymal secretion increases; irritate the duodenum, and it is said bile will be supplied in increased quantity; it is unnecessary to carry the illustration further.

How does masturbation inducc this irritation? Within moderate limits it would not do so; but if you give any canal too much to do, you will ultimately develope irritation in it, more especially at its orifice. If urine be passed too often, in cystitis for instance, the orificc of the urethra becomes red, and the samc thing happens to other conduits: it is in this way that musturbation or sexual ex-

cesses may develope irritation at the mouths of the ejaculatory ducts: it is in that way increased secretion is determined in the testicle; and thus involuntary discharges, consequences of masturbation or excesses, are explained.

It is easy to explain how gonorrhœal discharges may induce a similar state of things: in many cases, and especially when the discharge is obstinate, the inflammation upon which it depends is extended backwards until it reaches the neighbourhood of the prostate; where it may excite, on the one hand, the kidney, on the other the prostate, and on the third the testicle, inducing each of those organs to furnish more than its accustomed supply. That the inflammatory action under these circumstances is likely to fix itself there, is shewn in two ways—the existence of stricture so commonly near that region, and the acute pain experienced beyond the curvature when a bougie is passed. Often the inflammation may extend to the bladder itself. Often it passes along the spermatic ducts to the testicle.

When the involuntary spermatic discharges are caused by stricture of the urethra, the immediate exciting cause is the same as when they are consequences of other circumstances; irritation of the mouths of the ejaculatory ducts. The irritation is then caused by the obstacle to the passage of the urine, and a state of chronic inflammation may be developed along the mucous membrane from the stricture to the neck of the bladder, and may even extend into that organ, or along the ejaculatory ducts.

Irritation within the rectum, when long continued, may extend to the sexual organs, and occasion the discharges which we are considering. In some cases the source of irritation of the sexual organs may continue to be confined to the rectum, and when that ceases the spermatic trouble may also cease; but in other instances the spermatic disturbance may persist after the irritation of the rectum is cured. There is no difficulty in accounting for this circumstance; the irritation, originally anal, has ultimately become urethral also, and will only yield to treatment directly applied to that part.

Every experienced surgeon has had ample opportunities of observing the intimate sympathy which exists between the bladder and the urethra, and the rectum. How an irritable bladder may make an irritable rectum; how piles, or other affections of the rectum, will occasion trouble in the bladder; how the application of caustic within the urethra will now and then induce spasm of the rectum; how, in the efforts made to empty the bladder, in many cases of stricture, a corresponding effort will be made by the rectum; it may not always be easy to explain, but they are facts commonly observed.

In most cases the evidence of involuntary spermatic discharges is clear enough, but the time comes when the ejaculation is unaccompanied by the ordinary sensations, and the patient may then be unaware of the extent of the evil. I have again and again known cases where the spermatic fluid passed out with the urine; others, in which the effort at stool caused a pressure to be made upon the

the distended seminal vesieles, and thus their contents were squeezed out; but the fluid may not pass until the proeess of buttoning up is going on, and the evil may be undiseovered. Still, unless the disorder be very advaneed, in most eases the person himself is aware of it when it passes with the urine, beeause it almost always passes with the last drops, and ean then be deteeted, and beeause a eertain sensation is experienced about the neek of the bladder. But when the medieal man is eonsulted, he ealls for the reeently passed urine, or requests that it may be passed in his presenee, and at the bottom of the vessel he perceives small granular diaphanous particles; and they are seen floating even before the urine cools; if the evil be however very advaneed, no peculiar sensation is experieneed, and the granular matter may be undeteeted, and may assume a more uniform eloudy appearance. In cases where uneertainty remains with regard to the deposit, we may advantageously have recourse to the mieroseope, by means of which the little long-tailed animalcules of the spermatie fluid can readily be pereeived. Under any debilitating causes, whether those eauses be found in frequent spermatic discharges, disease, or old age, the fluid beeomes mueh thinner, and the animalculcs mueh less numerous, and they may be almost, if not altogether, wanting.

One of the general symptoms resulting from too frequent spermatic diseharges, which is most distressing to the sufferer, is a state approaehing to, if not at the time, aetual impotency. It is not that the seminal fluid, though deterioriated, is incapable of determining fecundation, but it is that the organs are wanting in the energy neeessary for projeeting the fluid into the uterus; the ereetion of the penis, if it exist at all, being only momentary. The digestive funetions beeome deranged; the bowels constipated; nutrition languishes; respiration is troubled; the voiee fails; the heart's aetion is interfered with, even to such an extent as to induee the belief of aetual disease in that organ, and hypoehondriasis becomes eomplete. These things do not advance far without causing trouble in the nervous system, manifested by some perturbation of the senses, by headaehe, with great sense of weight or pressure, and they are aecompanied by loss of memory; a timidity and apprehension whieh are very painful.

It must be evident to any one who takes the trouble to refleet on these things, that as the eauses of these diseharges are many, the treatment must also be variable. When the irritation is in the reetum, the ease will require a very different eourse of treatment to one proeeeding from strieture of the urethra. We will therefore make such general remarks as are proper with referenee to the treatment of the several varieties of the affeetion which we have considered. First, when the eause is masturbation or sexual excess:—the causes here are voluntary; the eure must also be voluntary. Lunar caustie will be powerless unless the patient has sufficient determination to abstain from the praetiee. But in many cases perfeet abstinence will not suffiee to put an end to the misehief; the *voluntary* discharges are got rid of, but they were persisted in

so long that a permanent irritation has been set up in the verumontanum, and that irritation may, as we have already explained, excite equally injurious *involuntary* discharges: and here a remedy must be found by the surgeon. The first thing we have to do is to introduce cautiously a bougie, to pass it down towards the bladder; but before it arrives there, the patient will complain of pain, which is sometimes very acute; and the point at which the bougie has then arrived is usually a little in front of the prostate. The surgeon must then carefully observe how far the penis has been extended, and a mark must be made upon the bougie to indicate the depth to which the instrument has penetrated, because that is the point upon which the lunar caustic must be applied. The depth to which we must penetrate must be marked upon the caustic instrument, which is then introduced and gently passed to the proper point, when the caustic is uncovered and the membrane brushed over: as soon as that has been done, the caustic is again covered, and the instrument is withdrawn. In some cases the patient complains of a little heat when the caustic is applied; in others, the sensation spoken of is a coldness. I have more than once known some discomfort almost amounting to spasm at the anus, but altogether it is astonishing how rarely any complaint is made. At the next time of passing the urine, some smarting is usually experienced; it may continue through the day, but it is very bearable. In all cases it occasions a discharge, which is sometimes considerable, and at first is thin and watery, but gradually becomes thicker, and in the course of a few days ceases. In a few cases the discharge is at first streaked with blood; and in a few rare instances there may be trifling hæmorrhage.

In most instances a feeling of improvement is early manifest, but the complete effect of the remedy cannot be estimated until the irritation has entirely subsided. Indeed, the amendment is almost always progressive, and frequently it happens, that when, by the end of the second or third week, not much benefit has been, apparently, derived, we are astonished by the change which has been brought about in another fortnight. If by the end of six weeks from the first application a very decided amendment, or a cure, be not produced, we may conclude either that an insufficient application of caustic has been made, or that the fatal habit is still persisted in. It has more than once happened to me to apply too little, but I have never had to accuse myself of applying too much. In any case a second application is indicated when the desired effect is not obtained from the first. More than two applications I have never had occasion to make; but I can easily conceive that circumstances might render a further recourse to the remedy proper.

How the lunar caustic acts in extinguishing the morbid sensibility of mucous surfaces I cannot tell, but of its virtues in this respect few surgeons can be ignorant. Every day we apply it to modify the painful irritability of ulcers, as well as that of certain affections of mucous membranes.

If the affection has been caused by a gonorrhœal or gleety discharge, the treatment must be the same as in the former instance.

If it has been caused by stricture, we must first restore the canal to its natural diameter; and it may be that the morbid state of the mucous membrane behind the stricture will gradually improve when the obstacle to the passage of the urine is removed, and that with the cessation of that morbid state may also cease those spermatic discharges which have been caused by it. But this conclusion is not inevitable; the obstacle to the passage of the urine may be removed, but the morbid condition of the posterior part of the canal, which has resulted from it, may persist: so may the specific discharges. Then the efficacy of the lunar caustic can be at once demonstrated; and a single proper and sufficient application of the remedy, with the precautions already indicated, will, in most cases, promptly cure the disease of the urethra as well as that of the spermatic organs.

If the discharges be determined by irritation of the anus, or the rectum, appropriate means must be used to cure the intestinal disorder; and it may be that when that has ceased the spermatic disorder will also cease. But it may persist, because a distinct irritation may have been determined in the urethra by the long-continued action of that of the intestinal canal; and to dissipate that, recourse must be had to the lunar caustic, under the same restrictions as have been already pointed out.

Medical Gazette, Dec. 23, 1842, *p.* 452.

[Case 1, was a young man, æt. 22, addicted to excessive masturbation, often twice a day, with frequent involuntary seminal discharges. The consequence was, complete derangement of the whole system: the sexual organs were extremely lax, the structure of the penis offering no feeling of elasticity when pressed between the fingers, and the scrotum almost as thin as a piece of linen cloth, the testicles hanging very low. On passing a bougie beyond the curvature he screamed out, and this being the seat of sensibility, the lunar caustic was applied as above directed, with the happiest effects. It was necessary to apply the caustic only once. Case 2, was a gentleman aged 35, who formed an intimacy with a lady of rank in Russia, whose propensities were still stronger than his own. The consequence was the most unbridled excess in sexual indulgences. On his return to England, he formed a similar connection, which he only gave up when he found his health giving way. The seminal discharges were constant. On passing a bougie along the urethra, it was sensitive throughout, but especially so at a point in the neighbourhood of the prostate.—In two days a bougie was introduced, in order to accustom the passage to the presence of a foreign body. The caustic was then cautiously applied without much inconvenience. In the succeeding three weeks, the discharge only occurred twice, once in the first week and once in the next fortnight. The case went on well in this respect, but he died of phthisis afterwards.

Cases 3, 4, 5, and 6 were nearly of the same character, with variation as to the cause; in all, however, the involuntary seminal discharges formed the chief feature in the disease, with some tender

part of the urethra. The caustic was invariably beneficial. Mr. Phillips ends his valuable paper with the following remarks:]

1st. It is necessary that the habits which have led to those discharges should be discontinued; any means will be powerless if the practice be persevered in.

2nly. When the primary cause of the affection has ceased, it is necessary to examine the urethra with an exploring instrument; and for the purpose I prefer an elastic catheter. The point where the pain is most acute must be accurately noted. The instrument must then be passed on carefully until urine passes along it. Observe how far it has penetrated, and having noted this, you must arrange your caustic apparatus so that it shall not reach so far by an inch, because the prostatic portion of the canal is not commonly implicated in the irritation. The point upon which the caustic is to be applied is, as near as practicable, about the region of the orifices of the ejaculatory ducts.

It may be asked, why pass the instrument on to the neck of the bladder at all, and why state that an inch in front of the neck of the bladder is the point beyond which the caustic instrument shall not penetrate? Why, again, the spot where acute pain is indicated, during the passage of the bougie, may not be regarded as the proper place for applying the caustic? In many persons the urethra is very sensitive, and the patient complains so frequently, that a little difficulty is experienced in deciding with that test; but when you have ascertained that from the orifice of the urethra to the neck of the bladder is seven inches and a half, and when you further find that in the passage of the bougie the most acute pain was experienced at a little more than six inches from the orifice, you can then, with much confidence, cauterise the space between the sixth and seventh inches, satisfied that the orifices of the ejaculatory ducts will not escape. It may be thought by some persons that all these precautions are unnecessary: this may be true: but off-hand surgery I dislike; and if in one case, by the neglect of such attention, I cauterised the neck of the bladder, and in another case applied the caustic entirely in front of the seat of mischief, my conscience would not acquit me of blame.

The foregoing precautions having been taken, the caustic must be exposed, and slightly revolved along the floor of the urethra for half a minute, without fear of harm, and rarely does it excite much pain—very rarely, indeed, does the patient complain of it. A few days ago I passed a bougie very gently along the urethra of a young man, but it produced syncope. When the caustic was applied a few days afterwards, the morbid sensibility was immediately blunted. Usually a smarting is experienced when the urine passes along the urethra, after the caustic is used, but it rarely continues troublesome over twenty-four hours. Before that time, usually, a thinnish discharge comes on, which may be profuse, and may be, though very unfrequently, streaked with blood. After a few days it begins to abate, and by the time it has ceased the change for the better in the patient's condition seems strikingly manifest. It is always necessary

to guard the patient against impatience, because four or five weeks will, in some cases, pass, before the beneficial effects of the remedy become clearly evident; and this is the more necessary, because he looks with intense anxiety to the result; and sometimes it happens that a single discharge, after the application of the caustic, will dash the cup of hope from his lips, and induce the most gloomy forebodings. I may again repeat what I have said before, that I have never applied too much caustic, but I have more than once failed by using too little; and much experience is necessary to apply the proper dose. However, it is better to err on the safe side, until experience shall have given confidence in the use of the remedy. I have scarcely ever had recourse to a second application until five or six weeks have passed, and given the assurance that the first has been insufficient.

Medical Gazette, Dec. 23, 1842, *p.* 452, *and Jan.* 20, 1843, *p.* 586.

[Since the publication of these remarks by Mr. Phillips, the treatise of M. Lallemand "On Involuntary Seminal Discharges" has been reviewed in the British and Foreign Medical Review, but as the treatment therein recommended is very similar to that adopted by Mr. Phillips, we need not again dwell upon it. The reviewer remarks that M. Lallemand may possibly be surprised that the armed bougie was adopted in similar, if not identical cases, by Sir Everard Home more than forty years ago. The following is the experience of three British surgeons on this subject, communicated to the reviewer by letter. One gentleman writes as follows:]

"I can recollect eleven cases in which I have found Lallemand's treatment successful, and one in which it did not sompletely succeed. In seven of the eleven cases a single application of the caustic was enough, in four it was necessary to apply it a second time; in a single case two applications were insufficient to cure the disease, although the improvement was very great.....The effects are immediate. A person in whom the discharge has continued for months, will have none for some days after the use of the caustic; but in some cases, as the irritation subsides, it will come again."

"I have carefully noted, "writes another gentleman, "*twenty-seven* cases treated by the nitrate of silver, either applied in the solid form to the prostatic portion of the urethra, or used in the form of injection. Of these cases, thirteen were completely cured; eight so much benefited that the emissions only returned occasionally and produced but little effect on the system; and the remaining five benefited by the period between the emissions being lengthened, though not to the same extent as the cases in the second series. The application of the solid nitrate, in many cases, produces very great irritation, sometimes complete retention of urine for a short period; in others, inflammatory irritation with bloody urine, lasting from eight to ten days and even longer. These circumstances lead me to use solutions of the salt, one or two grains to the ounce, advising the patient to inject several times at intervals of three and four hours, till a marked irritation was brought on; then to discontinue the remedy for a

time and to have recourse to it again if the cure was not effected, when the irritation has subsided. The injections used in this way produce often great irritation and bloody urine, which continues sometimes many days. They have, however, in almost every instance, a beneficial effect upon the emissions."

A well-known and experienced Scottish surgeon observes:

"With regard to Lallemand's method of cauterizing the urethra, I have tried it in above a dozen cases, and in the majority of them with decidedly good effects. In those distressing cases of irritability of the bladder, where the prostatic portion of the urethra is chiefly affected; in certain cases of chronic disease of the mucous membrane of the bladder, and in that very prevalent and debilitating complaint to which young men are subject, nocturnal emissions, the efficacy of the practice is sometimes very striking. In the latter case, when the cauterization of the prostatic portion of the urethra fails, I have been lately in the habit, from a knowledge of the very intimate sympathy subsisting between the parts, of applying the cautery to the external orifice of the canal, and for about an inch down, and I think, in some cases, with more decided advantage."

The last communication we shall quote is the following:

"I have employed the caustic in several cases in private and at the hospital, and I entertain a very favorable opinion of its efficacy: indeed, in some instances, its good effects have been quite remarkable. I have used it successfully in cases of seminal emissions from self-abuse, sexual excesses, or in case of obstinate onanism, which affections appear to be attended with, and partly kept up by, a morbid state of the prostatic part of the urethra. After using the caustic, I have found benefit from small doses of cubeb powder (gr. x.—xxx.) combined with the tincture of hyoscyamus, and also from steel medicines; the patient practising, of course, the most rigid self-denial in respect to the cause of the complaint. The patients upon whom I have employed the caustic, have not experienced the severe effects described by Lallemand as 'occasionally' resulting from it. The application which I make is always slight and transient, and the effects of it subside in a day or two. I have never had occasion to apply leeches to the perineum afterward, and in no case has swelling of the testicles been produced by it. The hip-bath and rest is all the treatment usually required: but I am generally obliged to make two or three applications of the nitrate of silver, and sometimes more before the complaint is wholly removed."

In regard to caustic injections as practised by the gentlemen whose notes we have quoted second and third, we have ourselves had no experience in *this* complaint, though of course, in common with every practitioner, we have times without number ordered them in gonorrheal and blenorrhagic discharges. We are disposed to think that the former of these two gentlemen considerably overstates the effects of cauterization as they usually manifest themselves, and we are also disposed to believe that the application of the solid caustic to the deep part of the urethra is less irritating and more effectual than the application of it in solution and to the outer part of the urethra.

The space which M. Lallemand usually cauterizes, is from the neck of the bladder to the membranous part of the urethra; but sometimes he brushes over the internal surface of the bladder itself to a greater or less extent. He cautions us strongly against repeating the operation too soon; and advises us to wait two or three weeks before we re-apply the caustic. Many of his cases appear to have been cured by a single application. Pain, and a slight discharge of blood, but never amounting to hemorrhage, seems to have followed some of his operations; but these consequences disappeared at the end of from twelve to forty-eight hours. In one case they are described as lasting three weeks, but this is mentioned as a rare exception. When the emissions have been *diurnal*, M. Lallemand regards the coversion of them into *nocturnal*, and the fact of the emissions being once more accompanied with erections and with pleasurable sensations, as a sign of the favourable effects of treatment and prospect of cure.

We shall now, with great brevity, advert to other modes than cauterization, of treating involuntary seminal discharges, depending *solely* on chronic inflammation of the prostatic portion of the urethra and of the vesiculæ seminales. The daily introduction of a bougie, and the retaining it for a longer or shorter time in the urethra, may first be mentioned. This, as our own observation enables us to testify, is often useful. Leeching of and blisters to the perineum are means of no slight efficacy, especially where the prostate is tender and enlarged. We have also prescribed tartar-emetic frictions of the perineum with excellent effects. A total abandonment of masturbation and a moderate use, or even an entire though temporary disuse of coition, are, of course, indispensable measures. One of our correspondents states that he has found opiates extremely useful. They are so in most cases though not in all; since they sometimes seem to augment the disease. Conium is safer: and both it and opium may be used both constitutionally and as a suppository. Cold clysters are often of benefit. As regards general means, alcoholic and malt liquors must be abandoned. M. Lallemand's opinion of these is exceedingly hostile; and we believe he is right in this. The food should be nourishing, light, and unstimulant; the bowels should be of course attended to, and, as a general rule, country air and exercise prescribed. Among medicines and articles of diet, tea and coffee in excess, tobacco, camphor, nitrate of potass, aloes, must be abstained from.

British and Foreign Medical Review, April 1843, *p.* 357.

59.—TREATMENT OF GONORRHŒA.

By Bennett Lucas, Esq , Surgeon to the Metropolitan Free Hospital, &c.

In the case of William ——, I injected a strong solution of nitrate of silver when he first presented himself, and repeated it the next day; these two injections were sufficient for his cure. With whom

this practice originated I cannot tell, but as long ago as the year 1833 I published some cases illustrative of the safety with which it might be adopted in proper cases, and the almost certainty in such of its producing a cure. Since that period I need scarcely tell you I have had many opportunities of testing the efficacy of this treatment, and the result is that I can conscientiously recommend it to your notice. At the time I published the cases I appended some remarks to them, which are not impertinent to the present occasion. "It is only in the first stage of gonorrhœa that this injection will be of benefit; in gleet it failed altogether; and in the inflammatory stage of the disease, when severe scalding, chordee, &c., are present, I would not be hardy enough to make use of it.

The manner in which nitrate of silver acts so effectually in the cure of gonorrhœa in its first stage, must be by destroying the specific virus and substituting in its place a simple inflammatory action, which gradually subsides, leaving the urethra in its natural healthy state. To effect, therefore, this object, it is necessary that the injection fully reaches the seat of the disease, and that it be well applied to the portion of the urethra between this part and the orifice. I can readily conceive a case where the injection only reached half an inch from the orifice, or was only partially applied, leaving the virus still in operation, the parts not only having to contend against its action, but also against the inflammation produced by the injection. Such is likely to be the case if the surgeon commits the syringe to the hands of his patient, and such actually occurred in one case, where, from an imperfect application, great pain followed, extending along the urethra to the prostate gland, accompanied by all the symptoms of the second stage of the disease in an aggravated form; which symptoms could not have been much relieved by the patient having taken internally a mixture of balsam copaiba, cubebs, and camphor mixture.

I, therefore, always apply the injection myself in the following manner:—Having filled the syringe I compress the urethra with my left hand, about two inches and a half from the orifice, to prevent its reaching further, and taking the syringe in my right hand I inject the solution, satisfying myself that it is well applied to all the intermediate portions of the canal.

In conclusion, I would again impress the danger of using the remedy in the second stage of gonorrhœa, the success amounting almost to certainty of its curing it in its first stage, and its failure in gleet."

To these remarks I shall now only add that at first I used the solution of nitrate of silver in the proportion of ten grains of the salt to an ounce of distilled water, but that now I use it double this strength, and sometimes even in the proportion of thirty grains to the ounce. I have tried it in other forms for the same object, such as made up into a kind of ointment with lard, but none answers so well as the solution. The syringe which you should use in injecting it should be made of glass or ivory; if you attempt to use a metal syringe, the moment it comes in contact with the solution a black

deposit takes place, you dirty the patient and yourself, and all goes on unsatisfactorily. A caoutchouch bag, armed with an ivory pipe, in the absence of the glass syringe, you will find the best instrument; but the latter is far preferable, and not the least of its recommendations is that you see the exact quantity of fluid you inject.

Provincial Medecal Journal, March 4, 1843, *p.* 444.

60.—ON AMPUTATION AT THE ANKLE JOINT.

By James Syme, Esq, Professor of Clinical Surgery in the University of Edinburgh, &c.

John Wood, aged 16, recommended by Mr. Aitchison of Dunbar, was admitted on the 8th of September 1842, suffering from disease of the foot, which had suppurated and ulcerated, in consequence of a twist he had given it in walking about twelve months before. On the instep, which was very much swollen, there were two openings that permitted a probe to enter freely into the substance of the tarsal bones, and more particularly the astragalus and os calcis. In these circumstances, it was plain that the patient, already much emaciated and reduced in strength, had no chance of recovery except from amputation.

As the disease extended beyond the limits of Chopart's operation, it would have been necessary, in accordance with ordinary practice, to remove the leg below the knee, but as the ankle-joint seemed to be sound, I resolved to perform disarticulation there. With this view, I cut across the integuments of the instep in a curved direction, with the convexity towards the toes, and then across the sole of the foot, so that the incisions were nearly opposite to each other. The flaps thus formed were next separated from their subjacent connexions, which was easily effected, except at the heel, where the firmness of texture occasioned a little difficulty. The disarticulation being then readily completed, the malleolar projections were removed by means of cutting pliers.

The patient suffered no constitutional disturbance or any alarming symptom after the operation, but recovered slowly, as was to be expected, from his general weakness and the unhealthy state of the soft parts composing the stump. A small slough separated from the edge of the lower flap, in which, as well as the upper one, I found it necessary, during the healing process, to make a counter opening for the free discharge of matter. He was dismissed on the 2nd of December, and I learn from Mr. Aitchison, that he continues quite well. The wounds are soundly healed; and any degree of pressure can be borne by the stump, which has a round form well suited for the adaptation of a boot or artificial foot, and is strongly protected from external injury by its thick integuments.

The result of this case is very encouraging to the performance of amputation at the ancle-joint,—an operation of greater importance than at first sight may appear, since, if found to be practicable with

safety and success, it should in a great measure supersede amputation of the leg below the knee. The circumstances requiring this operation seldom affect the leg itself, because the limb, if so seriously injured or diseased as to require amputation, must almost always be removed above the knee. But while compound fractures and malignant tumours of the leg are thus in general subjects for amputation of the thigh, diseases and injuries of the foot have too frequently claimed amputation of the leg, Modern surgery, no doubt, has circumscribed this field for the operation, by introducing partial amputations of the foot, but there still remain cases of no rare occurrence which are held to demand its performance.

When caries attacks the metatarsal articulations of the toes, it is usually confined to a single joint, that of the great toe being the one by far most frequently affected; and Mr. Liston's happy employment of straight-cutting pliers, instead of the variously formed saws previously in use, for dividing the bones, has rendered removal of the disease from this situation so easy, that the old practice of amputating the leg on such occasions seems hardly credible. If the caries again be seated at the other or proximal extremity of the metatarsus, it is sure to engage also the adjoining tarsal bone or bones, and therefore the operation suggested by Mr. Hey of Leeds, which was to disarticulate the metatarsus from the tarsus, is not applicable. In many cases, however, as only one of the tarsal bones is engaged, it may be taken away with the corresponding part of the metatarsus, so as to render the foot merely narrower without diminishing its length. Thus the first metatarsal is removed along with the internal cuneiform bone, and the os cuboides with the two metatarsal bones articulated to it. But the operation of Chopart, which leaves only the astragalus and os calcis, is the most valuable of all partial amputations, as it commands the largest portion of the foot requiring removal for disease or injury, and at the same time preserves a support for the patient not less useful than that which is afforded by the whole of the tarsus. Its introduction was long opposed on the ground that the extensor muscles of the ankle acting through the tendo achillis, when no longer antagonised, would draw up the heel and point the cicatrix to the ground. I performed this operation in 1829, so far as I know for the first time in Edinburgh, and have frequently done so since, with the most satisfactory result, no inconvenience having ever been experienced from the source just mentioned, as the cut extremities of the tendons on the fore part of the joint speedily acquired new attachments, enabling them to counteract the extensive power.

But when caries affects the astragalus, or os calcis, or, as very frequently happens, is seated in the articular surface between these bones, no form of partial amputation can be of any avail, and attempts to cut out the diseased bone generally prove unsuccessful. In cases where the tuberosity of the os calcis is alone affected, excision may be executed completely and certainly; and it is sometimes, though rarely possible to extirpate the disease, even when it extends to the articulation, either directly by gouging out the carious

part, or by making a perforation through it aeross the foot, and passing a seton, which may be made the vehiele of suitable applieations, sueh as the red oxide of mereury, the mineral aeids, or a saturated solution of the nitrate of mereury. When these means fail, or are abstained from, in despair of their effieieney, amputation of the leg is the more ordinary resouree, and the same measure is of eourse eonsidered neeessary for similar disease of the ankle-joint. In the ease of eompound dislocation of the astragalus, with or without fraeture of the malleoli, it is deemed proper, in the first instanee, to give the patient a ehanee of retaining his limb:—unless his habit of body, or the eireumstanees in whieh he is plaeed, should be unfavourable for his reeovery, when prudenee is thought to require amputation of the leg.

It thus appears that compound disloeation of the astragalus, and earies of this bone, with its adjoining artieulating surfaees, are the prineipal eases for amputation of the leg, and that consequently this operation may usually be superseded by amputation at the ankle-joint. It may be objeeted that, when the joint itself is diseased, entire removal of the artieulation must be requisite. But in what is eommonly ealled disease of the ankle, the joint between the astragalus and os caleis is affeeted mueh more frequently than that between the astragalus and bones of the leg; and even when the latter condition really exists, it would be easy to remove all of the bone that is essential for reeovery, by sawing off a sliee from the artieulating extremities of the tibia and fibula, as the earies penetrates to no great depth of the eaneellated texture.

The advantages promised by amputation at the ankle-joint, instead of the operation near the knee, are—1st, That the risk of life will be smaller; 2d, That a more eomfortable stump will be afforded; and 3d, That the limb will be more seemly and useful for support and progressive motion.

The risk of life must be less, beeause the parts divided and removed are not nearly so extensive as when the leg is amputated, hardly exeeeding, indeed, those eoneerned in Chopart's operation; beeause there is less room for hæmorrhage, either immediate or seeondary, owing to the smaller size of the vessels eut, whieh are merely the branehes of the posterior tibial, and the anterior tibial artery, very near its termination; and beeause the eavities of eylindrieal bones not being opened, the danger of exfoliation from the dense osseous texture, and of inflammation in the medullary veins, is avoided. The stump will be more eomfortable, beeause it is formed of parts peeuliarly well ealeulated to proteet the bone from injury, and not disposed to eontraet like the museular tissue; beeause the cut extremities of the nerves being smaller, will be less apt to enlarge and beeome the seat of uneasy sensations; and beeause the absenee of exfoliation insures eomplete union of the integuments over the bone. And the limb will be more useful, as well as seemly, from full play being afforded to the movements of the knee-joint, without the embarrassment of an imperfeet stump.

On these grounds, I think amputation of the ankle-joint may be

advantageously introduced into the practice of surgery. I regret having cut off many limbs that might have been saved by it, and shall be glad if what has here been said in its favour encourages others to its performance.

Lond. and Ed. Monthly Journal of Med. Science, Feb 1843, *p.* 93.

[Mr. Syme relates the following case in a subsequent number of the same journal, in confirmation of the opinion that "it would be easy to remove all of the bone essential to recovery by sawing off a slice from the articulating extremities of the tibia and fibula, as the caries penetrates to no great depth of the cancellated texture."]

Dr. W. a medical gentleman, about 25 years of age, after suffering from general rheumatism, was twelve months ago attacked with severe pain in the left ankle, accompanied by swelling and inability of using the limb. Various remedies were used without much benefit. An abscess opened in the course of the summer, and continued to discharge from a sinus between the ankle and heel. Six weeks ago, I saw him with Mr. Goodsir. He was much reduced in strength, and greatly emaciated, obtaining no rest except through the use of opiates, and evidently sinking under his protracted sufferings.

In these circumstances, amputation appeared to offer the only hope of relief, and even this measure, if carried into effect at the usual part below the knee, threatened no small danger in the patient's weak and irritable state. I proposed disarticulation; and meeting with no objection, performed it as described in my former paper. The articulating surfaces of the joint being every where divested of cartilage, rough, and carious, instead of removing the malleolar projections separately, I exposed the bone sufficiently to saw off both together, with a thin lamina of the tibia connecting them. This was effected with the greatest facility, and left a perfectly sound surface. No constitutional disturbance followed—the patient improved in strength as well as appearance every day after the operation, and the healing process proceeded most satisfactorily. There is now merely a slight watery discharge from the cavity of the flap, as happened in the former case, and required counter openings for its vent. But these have been rendered unnecessary on the present occasion, by an opening through the integuments of the heel, which was found unavoidable in dissecting them from the bone, owing to their thinness and firm adhesion. The drain thus afforded has proved so useful by permitting a free escape to the discharge, and allowing the edges of the flaps to unite throughout their whole extent, that I think its intentional establishment would always be advantageous.

Ibid, April 1843, *p.* 274.

The following case, illustrative of the power possessed by nature in effecting the restoration of injured joints, and the wonderful rapidity and perfection with which that process appears to have

been effected in this instance, is deserving of attention, and is a most interesting fact, both in a pathological and physiological point of view.

The safety, too, with which the operation for excision of the head of the humerus may be performed, even under circumstances somewhat unfavourable, together with its decided superiority over that of amputation at the shoulder-joint, whenever the latter may be at all dispensed with, must arrest the attention of every observer.

Case.—About the latter end of February 1840, a Hindoo soldier, aged 21, attached to one of the regiments stationed at Candahar, in Affghanistan, disgusted at having been addressed in a surly manner by a subordinate native officer, went at once to his quarters, and throwing himself on his bed, discharged his loaded musket into his left shoulder, pressing at the same time the trigger with the toe.

On examination of the man, half an hour after the occurrence, two circular wounds on the left shoulder were observed corresponding to the entrance and exit of the bullet—one, about an inch below the coracoid process of the scapula—the other, larger and more ragged, immediately beneath the outer angle of the acromion, the edge of which was torn off. Through the latter, the finger was easily passed into the joint, where it encountered synovial membrane and rough fragments of the shattered bone. Not knowing to what extent lesion of the parts, more immediately connected with the vitality of the limb, had taken place, and the hæmorrhage being moderate, I contented myself with enlarging the wound, made by the ball's exit, for the purpose of relieving tension of the swollen parts, and for admitting of the extraction of a piece of bone, the size of a hazel nut, which proved to be a portion of the articulating surface of the humerus. Under the use of cold water dressing, and moderately active antiphlogistic measures, the inflammation, &c., gradually subsided, and the wounds healed, with the exception of two fistulous openings, giving passage occasionally to small portions of bone, and discharging matter, which, becoming rather profuse, and the man's health rapidly declining in consequence, an operation for the removal of the splinters of bone and head of the humerus was determined on, and performed on the 10th of April, six weeks after the infliction of the injury, in presence of Messrs. Colquhoun, Lock, and Healey, of the Bengal Service. The patient seated and supported with his arm a little removed from the side; a perpendicular incision, from the point of the acromion, nearly to the insertion of the deltoid, was made down to the bone—on which venous hæmorrhage, to considerable amount, took place. On drawing asunder the edges of the wound, the lacerated articulation was brought into view, enveloped in a dense mass of fibro-cartilaginous substance, the result of the previous injury and inflammation. Numerous fragments of bone were removed, (twenty in number) as they presented themselves to view; and the disengagement of the fractured head of the humerus was attempted, but the strong cartilaginous adhesions, surrounding the bone, rendered that impossible. In order to accomplish this step of the operation, a transverse incision, to

the extent of three inches, was next made, at right angles to the former, through the deltoid posteriorly, an inch and half below the acromion—when, with a probe-pointed bistoury guided on the fore-finger, the dissection was carefully continued all round, and after some time the insulation of the head of the bone completed sufficiently to admit of a plate of metal being passed behind it, for the protection of the soft parts preparatory to the application of the saw. The man now became faint, and while in that state, the head of the bone was partially turned out and taken off, the whole of what is denominated the anatomical head and neck had been shot away, and an oblique fissure ran through the portion of the bone, which was removed an inch and a half below the tubercles, with a common amputation saw; the glenoid cavity not being injured, was left untouched. On clearing the cavity of the wound from fragments of bone, here and there impacted in the substance of the soft parts, the posterior circumflex artery was cut—pressure above the clavicle commanded the hæmorrhage, and the vessel was secured. The lips of the wound were now brought into apposition, and secured by means of four sutures and straps of adhesive plaster, covered with lint soaked in compound tinct. Benzoin. A pad was placed in the axilla, and the arm supported in a sling, and secured to the side by a bandage; copious suppuration of healthy matter was soon established, and the man continued to improve daily; so that at the end of a few weeks the wound was almost entirely cicatrized, and he was beginning to make use of the hand and forearm.

At the expiration of three months and a half his health was completely re-established, and he had become fat and strong. The use of the hand and forearm was complete, and he could already separate the elbow from the side to the extent of six or eight inches.

No perceptible difference in the length of the two limbs was observable. A very slight oozing of matter still continued from a fistulous opening in the site of the ball's entrance, arising probably from the presence of some small foreign body driven in by the ball.

In February, 1841, ten months after the operation, Mr. Healey describes the man as exhibiting the same healthy, robust appearance, having recovered considerable power and use of the limb, which he was enabled to elevate, that is to say, at an angle of about 70°, nearly at right angles to the trunk, and bring it forwards almost to the natural limit. Scarcely any perceptible difference in the length of the two arms could be discovered; a minute fistulous opening existed, giving discharge from time to time to a few drops of matter.

Remarks—A chain-saw is indispensable, I conceive, to render this operation expeditious, when the parts have become at all consolidated by previous inflammation.

Had the operation been performed immediately, or on the subsidence of the inflammation in the first instance, the difficulty experienced in disengaging the bone from the surrounding parts would of course have been avoided, and the operation much simplified.

It is worthy of remark, as showing the danger of inoculation with the fluids of certain diseased parts, that while engaged in the above operation, I received a very slight wound on the fore finger, just sufficient to raise the skin, which nevertheless in a few days inflamed and degenerated into an obstinate phagedenic ulcer, causing considerable constitutional irritation, and terminating, after two months of great suffering, with loss of the joint.

Dublin Medical Press, Dec, 14, 1843, *p.* 369.

61.—ON PILES.

By R. A. Stafford, Esq.. Surgeon to the Marylebone Infirmary, &c. &c.

Hæmorrhoids are an enlargement of the veins of the rectum, which become at first swollen and tense, and the blood contained in them remains coagulated, and thus a livid tumor is formed. At length, from the thickening of their coats, and from the coagulated blood contained in them becoming organized, they form excrescences on the internal surface of the gut, or at the verge of the anus. At first, their parietes are very thin, consequently they are apt frequently to burst, when they bleed very profusely, and are then termed *bleeding piles.* When they do not bleed, they have vulgarly acquired the name of *blind piles.* Hæmorrhoids are divided into internal and external, and they may be in various states of disease, each of which will require different treatment. They may be mere excrescences, when the only inconvenience they give will be their presence as foreign bodies: they may be inflamed, when they become very painful and swollen, looking not unlike a cherry; they may be in a relaxed state, resembling a half-dried red grape, and they may be ulcerated.

The causes assigned for hæmorrhoids are many. People of sedentary habits are the subjects of them; costiveness, by the pressure of the hardened fæces on the veins, will produce them; and any thing that may irritate the rectum—for instance, a drastic purge, containing aloes, scammony, &c. I have known persons who have never had piles before take aloes and scammony, and they have been in such a state that they could hardly walk for them. Piles, I have no doubt, are, in some, constitutional and hereditary, and that they descend from father to son from generation to generation. I have frequently questioned those who suffer from them, and they have informed me that either their father or mother has been afflicted with them, and that the disease has been handed down to them as a family complaint. No doubt, in such instances, the rectum is naturally weak.

It has been observed that those who are affected by a disease of the liver are frequently the subjects of piles. This may be accounted for by the connection the hæmorrhoidal veins have with the vena porta. The liver being diseased, the circulation of the blood through this vessel is obstructed, and thus the hæmorrhoidal veins become

congested. Any obstruction in the veins of the intestines will produce congestion of the veins of the rectum, and consequently hæmorrhoids: in short, whatever may impede the venous circulation of the viscera may give rise to this disease. Those who have diseases of the lungs, also, are frequently the subjects of hæmorrhoids and diseases of the rectum.

On examining many cases of hæmorrhoids which are presented to our notice, it could hardly be imagined that the excrescences which we see could ever have been connected with the veins; they are of so tough, hard, and even, in some instances, of almost a cartilaginous nature. I have seen piles so hard that their structure has resembled the gizzard of a bird when cut into; or have been not unlike the texture of brawn. No doubt the constant irritation, and the repeated attacks of chronic inflammation of the part, bring them ultimately into this state.

When an individual is subject to hæmorrhoids, the first symptom he experiences is a sense of weight and fulness in the rectum. Heat and pain supervene, which is frequently followed by bleeding when he goes to stool. The piles now protrude at the anus, and are of a lesser or greater size, sometimes being inflamed, and sometimes not. When they are internal, there is pain in the sacrum, and a sense of weight and fulness high up in the gut. There is also considerable difficulty of voiding the fæces, constant straining, and tenesmus.

The treatment of piles varies according to the state in which we find them, and also whether they are internal or external. In simple piles, when they are external, and when there is no inflammation, laxatives internally, and astringents externally, are the best remedies. At first, perhaps, give a dose of castor oil, or an aperient of senna and manna, and sulphate of magnesia combined, or any other aperient, except aloes and scammony, which will answer the effect of relieving the bowels. After this, order laxatives: such as the confectio sennæ alone, or combined with potass. supertart, or sulph. sublim. and desire the patient to foment with the decot. papaver alb.; or sit over a bidet of warm water. Apply a solution of liq. plumb. acet. dil. Use a cooling ointment, such as cerat. plumbi acet., or if the hæmorrhoid requires being constringed, employ the ung. galli, the ung. oxyd. zinci, &c.; also, should they be in a relaxed state, desire the patient to use an injection of the decoction of the elm or oak bark, with the addition of alum in proper proportions.

In some cases it has been recommended by Sir Astley Cooper to puncture the pile with the point of a lancet, and squeeze out its contents. This should be done cautiously, for fear of hæmorrhage. In chronic piles the confectio piperis has been of great service, continued for some time. It appears to stimulate, and give a new action to the parts. If the piles are inflamed, then apply leeches upon them, or to the verge of the anus, using an evaporating lotion, a poultice, an opium injection, or an opium ointment, as the case may require, repeating all these remedies as often as they may be

necessary. The diet is of great importance; it should be bland, and meat should be avoided. Gruel, arrow root, puddings, macaroni, &c., is the best food.

The case before us is one of aggravated piles; so aggravated, that when protruded at the expulsion of the fæces, they are retained by the sphincter of the rectum, and cannot return with the bowel by the action of the levator ani; consequently they remain with that part of the intestine to which they are attached external, and appear like prolapsus ani. In such a case as this none of the common remedies are of use. Aperients, laxatives, astringents, soothing ointments, Ward's paste, &c. may give temporary relief, but the only chance of cure is by their removal.

There are two methods of removing piles; by excision, and by ligature. When the pile is not attached to the intestine by a broad base, or is not internal, then excision is the quickest method of relief, but when it arises by a broad base, or is internal, then the removal by ligature is preferable.

[The removal of piles by excision is certainly very frequently a dangerous operation, from the fearful hæmorrhage which ensues. This hæmorrhage may continue for hours. Mr. Stafford relates a case in which a moderate sized chamber-potful of blood was lost before it could be stopped. The ligature, therefore, is the means now generally adopted to remove these bodies.]

There are two modes of applying a ligature to hæmorrhoids; one by surrounding them at their base, the other by passing a double ligature through their centre, at their base, by a needle, and then tying each half separately. When the pile is not large, the first of these methods is best: but when it is large, the latter is preferable. Should there be any doubt whether the vessels supplying the pile can be strangulated by tying the whole base of the tumour, it is better at once to use the double ligature. By doing so you will be certain of cutting off the supply of blood, and the hæmorrhoid must slough off; for by piercing the base at the middle with a double ligature, you immediately destroy the circulation through the vessels at the centre, and thus the death of the part is certain.

Before the operation is performed the patient should be desired to protrude the bowel, when the piles will be exposed. He will probably find it most convenient to lean forward on the edge of the bed, or to lie down on the side, to effect this object. Having ascertained the number of the tumours, and completely defined their base, you thread a curved needle, or a pile needle made for the purpose, with a double ligature. You then pass the point of the needle through the base of the pile: having done so, you cut the ligature and take the needle away, whereby you have two distinct threads through it: you now tie each thread tightly on each side of the base of the pile, and thus you completely strangulate the vessels supplying it. You treat each hæmorrhoid in the same manner, when in a few days they all slough off, and the bowels heal. Sometimes it happens that another crop of piles makes its appearance

when the first you have tied disappears: this is owing to there being more left behind internally. Under such circumstances you must tie them in the same manner as the others were.

Medical Gazette, April 7, 1843, p. 62.

62.—ON THE USE OF NITRIC ACID AS AN ESCHAROTIC IN CERTAIN FORMS OF HÆMORRHOIDAL AFFECTIONS.

By John Houston, Esq., M.D., M.R.I.A., Surgeon to the City of Dublin Hospital, Lecturer on Surgery, &c.

[The safety and efficacy of the following mode of practice adopted by Dr. Houston in hæmorrhoidal cases, is confirmed by the testimony of Mr. Cusack. These two names will induce us to place confidence in any new mode of treatment recommended by them. Before explaining his use of nitric acid, Dr. Houston enters briefly on the pathology of hæmorrhoids. The form in which they commonly exist, is that of a simple varicose state of the veins, and it would be well if the terms "*varices*", or "*varicose tumours of the rectum*" were applied to such cases instead of the term "*hæmorrhoids*".]

Varices of this nature present themselves at the mucous surface, or under the skin in the neighbourhood of the anus; or they may appear in both these situations at the same time. When turgid with blood, they form violet-coloured tumours, elastic, little painful, disappearing on pressure, but re-appearing as soon as the pressure has been removed. In many instances, these outward dilatations constitute only a moiety of those which surround the rectum, the inferior part of the bowel being frequently imbedded in a mesh of dilated and turgid veins, the presence of which must render the knife, or even the needle and ligature, implements of danger in such cases, whenever they happen to become objects of surgical treatment.

But it is seldom for these varices, in their simple state, that remedies are sought. It is usually for some of the consequences that spring out of them, or some of the complications which attend them, that the medical attendant is consulted;—a circumstance which should never be lost sight of in forming a prognosis as to the amount of relief which may be given, or in determining the extent to which treatment is to be pushed to obtain that relief.

The state of the parts to which the term *external hæmorrhoid* is applied, is one of these conditions. The affections bearing this name are at first merely off-sets from the dilated veins, admitting, during their early periods, of the ready ingress and egress of blood from these latter vessels; and sometimes continuing so to admit it for a long period. Such are found under several forms. Sometimes, and that even where no complaint has ever been made of them, they are visible in considerable numbers around the anus, as shut sacs, inclosing small clots of blood; and, as marking their original source,

still lined with a fine serous membrane analogous to that forming the inner coats of the veins: these are, evidently, the remains of external piles, which have undergone spontaneous obliteration. At other times, especially when seated in the line of junction between the skin and mucous membrane, the affection assumes the form of permanent tumours, of greater or less magnitude, and of complex cellulated texture. Such tumours (marischi) by forming adhesions to the mucous membrane or skin, and bursting there, under circumstances of congestion, and also by their becoming occasionally the seat of acute inflammation, produce all the inconveniences which characterize a "fit of the piles." They, too, in the course of these changes, may undergo a spontaneous cure, leaving behind them only small fleshy, innocuous tumours; but as long as they continue to swell and bleed, they may be regarded as still remaining in communication with the deeper varices from which they originally sprung. Operations on such tumours, by cutting instruments, are, on this account, usually attended with considerable, sometimes profuse, hæmorrhage; but, nevertheless, such operations may be regarded as safe and justifiable, inasmuch as, that any bleeding which arises may be readily checked by the ligature, styptics, or actual cautery. Accordingly excision, or destruction with the red-hot iron, are unhesitatingly resorted to, whenever the inconveniences attendant on such affections require a radical removal for their cure.

Respecting the term *internal hæmorrhoid*, it is more vague in its application; and the pathology of the state of parts which it is meant to indicate, is much less generally understood. I believe that the simple varix, or even that more complicated state in which it exists as an external hæmorrhoid, is not the condition which most usually produces distress or annoyance, in what are called "inward piles." The amount of suffering is never proportioned to the bulk of such simple varices. We see individuals in whom the veins are so large and prominent, as to appear calculated, mechanically, to produce great intestinal derangement, yet in whom, except in so far as occasional bleeding incommodes them, there is not much distress; whilst in others, a hæmorrhoidal tumour, not bigger than a marble, deranges the entire economy of the body. The state of the mucous membrane covering such varices would appear to influence the condition of the case, more than that of the varix itself. While the mucous membrane continues smooth and pale, and free from morbid sensibility, there will be little distress, and the tumours will swell and subside, and even pour out blood occasionally, without the patient being at all aware of the extent of organic derangement which he labours under: but as soon as a relaxed state of the membrane,—a state to which it will soon be brought by the irritation and dragging to which it is subjected by the pressure of the fæces against the tumour of the varix, and the efforts of straining to overcome constipation,—as soon as this state of the membrane is induced, then, the varix coming down under the sphincter, is strangled, made to bleed, and to inflame. Or, when from similar causes, ulceration of the mucous membrane over the varix is established, then, distress

of another and even a worse description, viz., tenesmus, mucо-purulent discharges, strainings at stool, and hæmorrhages of dangerous amount are entailed upon the sufferer. Or, still farther, when that state of the mucous membrane, to which the term "vascular tumour" is applied, supervenes, as I believe it often does, upon a varix, then, a simple and otherwise innocuous affection becomes one productive of most poignant suffering.

Of this latter complication,—the *vascular tumour*,—as that to which, in particular, I consider the application of the nitric acid beneficial, I propose to speak somewhat in detail.

The multiplicity of names given to this disease, such as "vascular tumour," "hæmorrhoidal excrescence," "erectile tumour," "spongy hæmorrhoid," "varicose tumour," "internal hæmorrhoid," &c., leads the mind astray, and prevents it from forming any accurate conception respecting its true nature. I am disposed to regard it as an affection of the mucous membrane and sub-mucous tissue, exclusively, and to treat it as such. It may, and I believe it usually has, for its basis, a nuckle or bunch of varicose veins; but it may also be a distinct and independent growth, the result of some other irritation in this region. I have seen it covering the surface of one varix in a rectum, while others in the same bowel have been smooth, and free from any such growth,—the former being the source of much annoyance, the latter giving no trouble at all. I have also seen the affection, in young individuals particularly, where the veins were quite free from any varicose dilatation, but in whom, after a time, varices formed as the result of the irritation of the vascular tumour. And I have observed that, in almost all cases of inward piles of long standing, no matter whether the affection have begun originally as a varix, or as a degeneration of the mucous membrane, both affections come to be present in conjunction, reciprocally aggravating each other's severity.

These tumours vary in size in different patients, from a pea to a walnut. Their number, also, is equally variable. Sometimes there is but one; in other instances, there may be two or more; and in others, again, they are so numerous and large as to cause, by their protrusion through the anus, a permanently widened state of that aperture, and a habitual prolapse, not only of the tumour itself, but also of a portion of the bowel. In the early periods of the affection, the tumours are so soft, compressible, and free from pain as scarcely to be discoverable by the finger when introduced into the rectum, and scarcely, therefore, to be deserving of the term, tumour; but when of long standing, and especially when they have been permitted to remain down for protracted periods at the water-closet, they acquire an increase of firmness and a tenderness which render them easily detected by such manipulations, and give them a tangible and permanent character. The dragging and pressure to which they are subjected in being pushed out and squeezed by the sphincter in defecation, renders them likewise prominent, and gives to them often a pedunculated or polypus-like form. The surface of the tumour is either granulated like a strawberry, or of a villous aspect. It is of

a red colour, and, when protruded from the anus, bleeds from every pore as from a sponge. It is easy to satisfy one's-self on this latter head, by drying the surface of the tumour, when a fresh issue of blood instantly takes place from every point of its surface. The blood discharged, in such cases, is always of the arterial red colour, —a circumstance which often, in itself, indicates the true nature of the affection, and enables us to distinguish it from rupture of a varix. But, nevertheless, although this may be true as regards the direct issue of blood from the part, yet this very fluid, may, if allowed to lie in the cavity of the rectum before being discharged per anum, acquire a dark red, and even a grumous character. The bleeding in the former is also of more frequent occurrence, appearing with every effort at defecation, and weakening the patient more by the frequency and persistency of the drain than by the quantity lost at stated periodical intervals, such as usually takes place in the bursting of varices from over-distention.

Regarding the pathology of "vascular tumours," there are, I believe, two varieties of organic lesion, which, although differing somewhat as to their origin and nature, produce nevertheless equal inconvenience, and admit of cure by the same means. One of these is that to which the term "erectile" has been applied, from the supposed resemblance of the disease to congenital affections of this class; the other,—a congested, hypertrophied, and tender state of the membrane, the result of irritative, or inflammatory action.

The first is regarded by many as a sort of aneurism by anastomosis of the small vessels of the mucous membrane and sub-mucous tissue exclusively, and may be independent from the first of varices of the general veins about the anus. Mr. Colles, who had an opportunity of examining the structure of one of those tumours in a person who died of another disease, says, "on slitting up the rectum, I saw three blood-vessels, each as large as a crow-quill, running for some way down the intestine and then dividing into a number of branches; these vessels ramified very profusely, and each seemed by interweaving of its branches to form one of these tumours. The trunks and branches were covered only by the lining membrane of the intestine. This examination shows us how inapplicable to this disease are the terms 'varicose tumours,' 'hæmorrhoidal excrescences.'" This affection may occur in youth, and has been seen high up in the intestinal canal; but its most frequent seat is the lower part of the rectum. There is not originally or necessarily any pain arising out of it; but, by long exposure in the rectum to many sources of irritation, and by enlargement and prolapse from the anus, it runs into a state of actual disease. It differs from ordinary nævi in not being necessarily congenital, but resembles them too much in its persistent tendency to increase in growth. They are, both, affections which equally require operations for their removal,

The second variety of the vascular tumour is of a chronic inflammatory nature, and may be best described by comparing it to the red, villous, tender, hæmorrhagic surface exhibited by the mucous membrane of the eyelids in old cases of chronic conjunctivis. With

the latter, too, the resemblance is still farther established by its habit of secreting pus independently of ulceration. Such tumours are apt to form on old internal varices, which, by their projecting into the cavity of the bowel, expose the membrane covering them to more than ordinary pressure and irritation, and thereby become the direct cause of this morbid development. Once established in connexion with the surface of a varix, the two making between them a compound disease, the distressing qualities of such an affection are not slow in exhibiting themselves. Thus, in one case in which there were several internal projecting varices, that only, on which this hypertrophied condition of the mucous membrane existed, gave annoyance, and on the removal of that and that singly, all hæmorrhoidal distress subsided. The "master pile" being removed, the others fell back into a state of painless quiescence. As in the foregoing variety, there is no relief for this affection but in destruction of the morbid growth. They both, therefore, differ from the diseased conditions which supervene on external varices, in having no disposition or power to undergo a spontaneous cure; and, consequently, are more likely, at some period of their course, to become objects of surgical interference.

If such be a correct view of the pathology of certain internal hæmorrhoids, and I have no doubt that in very many cases it will be found so, then, I would ask, are such severe remedies as those usually employed, viz., the knife or ligature, either necessary or safe? If the seat of the baneful part of the affection lie on the surface, why not rather adopt such means as may remove that surface, *per se*, without extending beyond it, rather than such as may, on the one hand, by going to an unnecessary depth, wound vessels of such magnitude as are capable, when opened, of pouring out blood to the hazard of life; or, on the other, by the severity of its operation, engender the most painful and the most dangerous symptoms? It is not for me to rehearse all the disadvantages which attend on these modes of treatment; suffice it to say, that no man ever applies either the knife or scissors, or even the needle and ligature, in any such patients, without more or less of misgiving as to the success, or apprehension as to the result of the experiment. It is enough to read the objections to any one of these operations, as detailed by the advocates of the other, and *vice versa*, to be satisfied of the little confidence reposed by the profession in either.

The properties of *pure nitric acid*, as an escharotic, point it out, in theory, as an agent fitted to take the place of these over severe remedies, in cases where a superficial destruction of the part to be removed is all that is required; and the application of it to practice has fully proved its efficiency as a substitute. This acid, at the density of 1500, destroys, on the instant, the vitality of the part to which it is applied, by the production of a chemical decomposition of its solid and fluid elements. The depth of the slough which is to follow may be regulated, in some degree, by the quantity of acid laid on the part; and its extent, laterally, may be confined with sufficient exactitude to the limit of its first application, by instantly

smearing the whole over with olive oil, which neutralizes its farther corrosive powers, by combining and forming with it a new, but no longer corrosive, compound. The beneficial effects of nitric acid, in arresting phagedenic and other unhealthy inflammations, and substituting in their stead one of a salutary character, recommend it as a remedy little likely, in itself, to do any serious mischief, if applied with the necessary precautions—a guarantee which certainly cannot be extended to other escharotics of equal power. The separation of the slough, after the application of nitric acid, leaves a healthy suppurating surface, which contracts and heals over very quickly.

The nitric acid, then, in its operation on the vascular tumour combines in itself all the advantages possessed by excision or ligature, without any of their disadvantages. The tender, turnid, and bleeding surface is removed with little pain and without danger; and, in the cicatrization which rapidly follows, a radical cure is effected. But the good effects do not stop here; not only is a reparation of the worst part of the affection accomplished, but, by the bracing up of the general mucous membrane which follows the removal of the relaxed and diseased part of its surface, other varices which may be present are supported and reduced in bulk, and ulcers, or even fissures, are healed: and these secondary good results may be regarded as not the least important which have taken place on the occasion. The resumption of the natural action of the bowels, and the general improvement in health which follows the application of the acid to a single vascular hæmorrhoid, even where several are left behind, show an improvement in the state of the rectum generally, greater than could be supposed to arise from the simple abstraction of one from among the number. The contraction of the mucous membrane following the removal of a portion of its extent, acts beneficially on the bowel, in the way, perhaps, that the contraction which follows the removal of it in the operation for prolapsus ani, acts; or in the way in which the removal of a piece of the scrotum, as recommended by Sir A. Cooper, operates in relieving varicocele; or, to use a still more familiar illustration, in that in which a laced stocking operates in remedying a varicose state of the veins of the lower extremities, viz., by bracing and giving support to the relaxed subjacent veins and other textures. The relief, too, which the bowel gains by the removal of such a source of local irritation, contributes, no doubt, in a prominent degree, to the production of the same good results.

The application of the acid may be made in the following manner. Let the patient strain as at the night-chair, so as to bring the tumours fully into view; and, while they are so down, let him either lean over the back of a chair, or lie down in the bent posture on the side on which the disease exists, with the buttocks over the edge of the bed.* Let a piece of wood, cut into the shape of a dressing-case

* I may here observe, in passing, in that any introduction of the finger into the rectum immediately before the operation should be avoided, as the pressure made thereby on the tumours will so reduce their bulk, that they will not for some time come down again sufficiently for the purpose desired. I mention

spatula, be dipped in the acid, and then, with as much of the acid adhering to it as it will carry without dripping, let it be rubbed on the tumour to the extent desired. The due effect of the acid on the part is shown by its changing it to a greyish-white colour. If a superficial slough be all that is required, a single application may be enough; if a more deep one, then two or three applications of the wood dipped in the acid may be made in quick succession; which being finished, let the part be well smeared over with olive oil, provided beforehand for the purpose. The prolapsed parts should then be pushed back within the sphincter, the patient put to bed, and an opiate administered. The pain of the application is sharp and burning at first, but goes off in two or three hours, and does not again return in the same form. A general uneasiness about the anus, on motion, together with a slight sense of heat, fulness, and throbbing, are felt for a few days; and there may be some little feverishness; but I have not seen or heard of any more serious effects from the remedy. In one case, a slight stranguary, which was experienced for a short time, disappeared under the mist. camphoræ c. opio. The symptoms following the application of the acid are usually so mild as not absolutely to require confinement to bed more than a few hours; although, for many reasons, such confinement may often be desirable. On the third or fourth day, a purgative draught should be administered, when the bowels will be found to yield to the medicine, generally without either pain or prolapse of the rectum. The progress after this to healing is rapid, and free from any disagreeable symptoms.

One important point in recommendation of the treatment by nitric acid is, its immunity from danger and from pain, or subsequent tedious confinement; for, although in the cases above cited, severe pain and confinement for a few days to bed are spoken of with candour, yet these conditions are not to be taken as the measure of the results to follow in the generality of such cases. The anxiety felt for the success of a new remedy, by increasing my apprehensions regarding it, magnified the sufferings of the patients in my eyes, and impelled me to take precautions for their mitigation beyond, perhaps, their real urgency or necessity, and certainly beyond what I have since experienced in other cases, which, in the confidence of success, I have regarded with more indifference; for, in fact, I have since several times known it to happen, that, after the first feeling of pain, the effect of the caustic, had subsided, the patient has continued to transact his ordinary affairs as usual.

A question of practice may arise, in cases where two or more vascular tumours coexist requiring the application of the acid, as to whether both or all should be touched in the first instance and at the same time? I believe such will, in general, be the proper course for adoption. The severity of the remedy has been shown to be moderate, or such, at least, as not to forbid its application to two

this, because I have seen both patient and surgeon disappointed, by being obliged from this cause to defer the operation to another day.

points of surface, more than to one; and, besides, the great advantage of completing the operation at once, and of having the time for the accomplishment of the cure thereby materially abridged, will be secured by the adoption of this course. The circumstances of the case must, however, often determine such a matter rather than any preconcerted rules.

But, let me not be misunderstood as to the cases for which I recommend the use of nitric acid. I do not speak of it as a remedy for all kinds and degrees of vascular tumours or internal hæmorrhoids; nor as one to supersede entirely the knife or ligature. There are cases, no matter how they have commenced originally, in which, from long standing or other causes, all the textures in the neighbourhood—blood-vessels, skin, mucous membrane, cellular tissue, &c., have become so implicated, that scarcely any one part appears worse than another; and in which some operation, if any, of a more sweeping nature must be had recourse to. For such, the knife or ligature may, according to the choice of the practitioner, be employed. The acid is, according to my experience, adapted especially for cases of more common, every-day occurrence; cases in which the disease, although not involving immediate danger, yet keeps individuals miserable, and interferes with them in the discharge of their ordinary duties of life; cases, in short, which astringents will not cure, and for which, excision or ligature would be unnecessarily severe remedies.

But, in speaking thus cautiously of the extent to which the acid is applicable, I believe that I am recommending it within the range of its power and applicability to the cure of hæmorrhoidal diseases. The case of a medical gentleman of eminence, cured of long continued and aggravated vascular tumours of the rectum by the nitric acid alone, is well known in this city.

And, farther, I have reason to believe that the beneficial application of this remedy is not confined exclusively to such cases as I have been recommending its use in, viz., vascular tumours. In experimenting with it on these affections I have found that the varices joined with them in some instances, were also removed by the same application.

In one case, the subjacent varix, which showed itself as such after being stripped by the acid of its tender vascular covering, disappeared under the action of a second touch of the caustic. And, in a very aggravated case of vascular tumour complicated with large internal varices which my friend Professor Hargrave brought me to see, both one and other were removed by separate applications of the acid. This patient, a respectable married woman, who for years had endured continued prolapses of both tumour and piles, was effectually cured by this treatment; and has since borne children without suffering relapse of the disease. The disappearance of such varices under its use may be brought about in three ways: first, by the direct action of the acid on the whole substance of the tumour, producing a slough thereof to its entire depth; secondly, by the extension of the inflammatory action to the sac of the varix,

inciting there a local phlebitis and a consequent coagulation of the blood and obliteration of the venous cavity; and, thirdly, by the destruction of the mucous membrane, simply, without obliteration of the sac—the remedy in this instance being derived from the support which the varix thereafter receives from the cicatrized and tightened membrane. However, as this paper was undertaken solely with the view of recommending the acid for the cure of what are understood by the terms "vascular" or "strawberry-like" tumours of the rectum, I must abstain from entering here upon new ground; reserving such farther observations as I may have to offer on these topics to some more befitting opportunity.

Dublin Journal of Medical Science, March 1843, *p.* 95—119.

63.—REMOVAL OF PILES BY THE WIRE LIGATURE.

By Professor Horner, Pennsylvania.

The plan here recommended, is to calm the rectum by cold water injections for some days before the operation; a precaution, the value of which I have learned from one of the best and most experienced surgeons we have, my friend Dr. Thomas Harris, of the United States Navy. The rectum being empty at the time of operating, the patient by straining in a squatting posture, forces the tumour or tumours out. He then goes to bed, and rests on the side corresponding with the tumour, and near the edge of the bed. A thick sail needle armed with a large ligature, is then passed transversely through the upper part of the base of the tumour; the needle being removed from the ligature, the two ends of the latter are tied together, so as to form a loop. A stout awl then transfixes the lower part of the base of the tumour in a line parallel with the ligature above.

In a large protruded pile, the usual anal pouches or sacs are much enlarged, and have their orifices pointed downwards. The awl when placed as intended, is between these sacs and the adjoining margin of the anus, and makes the part so firm, that it is more easily operated on subsequently. The inferior third of the base of the tumour is now detached from the anus with a scalpel, the anal sacs, and a corresponding loose fold of skin which commonly exists at the same time with large hæmorrhoids, going along with the tumour. Should the tumour recede, the loop above, and the awl below, enable the operator to draw it out. A wire noose is then thrown around the adherent base of the tumour, and drawn perfectly tight, by the aid of a double canula. This noose occupies the previous incision and it may be placed with great accuracy, from the command over the pile derived from the first ligature and the awl.

The tumour, if very large, may now be punctured so as to disgorge its blood. At the end of five hours, the part is perfectly dead by strangulation, the tumour may then be cut off near the wire noose, say three lines from it, for which act in the process of

operating, a pair of scissors will do; but what is still better, Dr. Physick's tonsil instrument, owing to the accuracy of its line of incision. The wire noose itself may then be taken away, as the vessels are so compressed and deadened, that no blood will pass through them.

The awl should be removed directly after the wire noose is applied and fixed, but the first loop should be retained for the final act, to wit, the excision of the tumour, as it assists very much. The operation thus completed, an injection of tinct. opii ʒ i. in two ounces of thin starch, puts the patient at ease, and he falls into a tranquil sleep.

I will conclude by stating, that it is of importance to detach well, by the incision first alluded to, the base of the tumour from the internal sphincter muscle, without which precaution, we cut through instead of lifting up and removing a plexus of veins at the anus; we also leave thereby unfortunately, a fold of tegument which swells and inflames largely, and the reduction of which swelling gives rise to a treatment as severe and protracted as a common attack of hæmorrhoids.

American Journal of Medical Science, Oct. 1842, *p.* 358.

64.—PALLIATIVE TREATMENT OF VESICO VAGINAL FISTULA.

By James Reid, M.D., London.

[The want of success generally experienced in the radical cure of this troublesome affection, makes us too often satisfied with simply a palliative remedy. If the surgeon, however, would be at the trouble to employ Mr. Liston's mode of cauterization at very long intervals, and wait patiently after each application of the cautery till the cicatrix had fully contracted, we think that he would be more successful in these cases. This practice is detailed in Art. 52 of our fifth vol., by Dr. Payan. Four or six months intervened between each application of the cautery, which enabled the part each time to assume that kind and degree of contraction which we observe in the cicatrices of severe burns of the skin. In a case related by Dr. Payan, the size of the false passage was so considerable, that she could easily introduce into the bladder her middle finger covered with four plies of surgeon's lint, and after the cautery had been applied six times, with intervals of two, three, or six months, the fistula would hardly admit a large sized knitting wire, and was ultimately cured. Owing to the troublesome mode of treatment, however, the surgeon will frequently be obliged to have recourse to some kind of pressure so as to prevent the constant dribbling of urine into the vagina: with this object Dr. Reid says:]

In the year 1835 I was impressed with a notion that the caoutchouc cloth might be adopted as a mechanical remedy in cases of this description; and in a small work which I published at that time I mentioned my intention of trying it should I meet with an oppor-

tunity for doing so. It was not, however, until the commencement of 1839 that a case fell under my notice, and on further consideration I thought that the simple India-rubber bottle might even be preferable, owing to its elasticity.

The aperture forming the communication between the vagina and neck of the bladder is occasionally large, and the intention of the instrument, therefore, would be, that it should effectually form a partition or complete plug between these two organs, thus preventing the constant flow of urine through it, and the consequent great irritation, inflammation, and thickening of the callous edges.

The apparatus consists of a common India-rubber bottle, of moderate side, but free, if possible, from those lines and ornamental tracings which are placed on some, as these render them more liable to burst on distention, owing to the unequal thickness. It should be of a pyriform shape, without any shoulders or sudden bulging out from the neck or stalk of the bottle, as the latter form interferes with the ready extraction of the instrument when required, or at least occasions unnecessary pain in removing it. To the neck of the bottle is attached a mount, containing a female screw, at the side of which is a small stop-cock. Mr. Weedon, the instrument-maker, has since suggested, and I think properly, that the air-valve now commonly used in the Macintosh cushions, &c. would be better adapted for the purpose. The other portions of the apparatus consists in a small *condensing* syringe, of the shape and size of the common breast-pump, the distal end of which terminates in a male screw, corresponding with the one attached to the bottle. The latter being well oiled or larded, and the air pressed out of it, is folded longitudinally, and carefully passed up into the vagina, until the lower end or mount is at the vulva. A certain portion of air is now *drawn up* into it by the simple removal of pressure, but it is not sufficiently distended till the condensing syringe is fixed and a few strokes of the piston used. The number required must depend on circumstances, but will soon be known by the patient complaining that the further distention begins to give pain. The stop-cock is now turned, the syringe disengaged, and a napkin applied to the vulva, fastened as usual.

Some inconvenience may, of course, be occasioned at first by the use of the instrument, and if the parts be in a very irritable state much pain may accompany it, but this is to be obviated by complete rest, the use of the hip-bath, and by warm vaginal injections. The bottle is to be removed for a short time every evening, previously allowing the air to escape by the stop-cock; the vagina is to be gently syringed out with warm water, and the bottle, after being washed, is to be replaced. It is, however, much better to be provided with two or even three bottles, which should be used alternately, as the heat and urine acting upon the caoutchouc constantly, render it more likely to burst or wear out. An oil-skin covering, adapted to the shape of the bottle when distended, and changed occasionally, will aid much in preventing the action of the urine on

it. The comfort resulting from the use of this instrument is soon perceived, as it prevents that constant flooding of water which had previously taken place, excoriating the parts, and rendering the bed and clothes almost unfit for use.

Although I have not found the frequent use of the catheter required, still at the commencement of the treatment it might be advantageous to combine it if there should be any difficulty in passing urine by the natural passage.

After I had commenced the use of this instrument, a medical friend to whom I mentioned it, thought he recollected a somewhat similar mode of treatment described in one of the early volumes of the "Medico-Chirurgical Transactions." On searching through them I found in the sixth volume a report in 1815, by Mr. Barnes, surgeon to the Exeter Hospital, in which he recommends, on the suggestion of an eminent London surgeon, Mr. G. Young, the use of "a gum-bottle of suitable size, to one side of which a piece of sponge, flat, and of the size of a dollar, is previously sewed, to cover the aperture into the bladder, and that the patient, by introducing a finger into the vagina, and compressing this, might at proper intervals allow the urine to pass. This answered for two hours, but if the urine was not then removed by the catheter it oozed out by the wound. The catheter was, therefore, introduced every two hours during the day, and kept in constantly during the night, the bottle being withdrawn till morning." One case seems to have been cured by the use of the above instrument in the hospital, at the expiration of nine months, the catheter being employed several times in the twenty-four hours, up to the end of that period. Two cases were uncured, and in two others, owing to the narrowness of the vagina, it was considered needless to attempt its employment.

Now, in hospital practice, where the patient is constantly under the eye of her medical attendant, and can enjoy complete rest, this plan may succeed; but, still, I have considerable doubts whether the success might not, in the above case, have depended in a great measure on the repeated use of the catheter during the day, for nine months, and its constant employment at night.

But with those patients who from circumstances cannot or will not benefit by a residence in a hospital, with such advantages attendant upon it, for months together, it would not be likely that such good effects would arise from the above plan as resulted in the first case; for so frequent an use of the catheter by the medical attendant would be attended with much trouble, and even were the patient taught to introduce it herself, little reliance could be placed upon her using it properly for so long a period.

As this untoward accident happens, too, generally in the lower ranks, where the female is obliged, if at her own residence, to undergo some fatigue, and perhaps hard labour, in order to aid in gaining a livelihood, absolute rest for a lengthened period would be almost impossible.

Lancet, Feb. 18, 1843, *p.* 736.

65.—TREATMENT OF CHANCRE.

By Langston Parker, Esq., Surgeon to the Queen's Hospital, Birmingham.

Venereal ulcers, it must be recollected, are in the commencement purely local diseases, resulting from the application of a morbid poison to the skin or mucous membrane, and the risk of constitutional infection is generally to be feared in the direct ratio with the time a primary venereal sore remains open. Hence it becomes necessary to attempt the destruction of a chancre at the very earliest period that it is presented to our notice.

A chancre, when first presented to the notice of the surgeon, is generally in one of two states—either in that of a small pustule with its contents yet undischarged, or a minute ulcer. In whatever state it may be, our first duty is to endeavour, by the use of escharotics, to convert the specific sore into a simple one. For this purpose you will find most authors recommending either a strong solution of the nitrate of silver, or the application of this caustic in substance.

When the nitrate of silver is used, if the disease be pustular, it will be necessary to open the pustule with the point of a lancet, to discharge its contents, and rub the whole surface and edges of the ulcer thus produced with the nitrate of silver previously cut to a sharp point; if the disease be an open ulcer it is to be treated in the same way.

The nitrate of silver thus applied will sometimes have the effect of producing a simple sore, but it will more commonly give rise to considerable irritation and inflammation, whilst the specific character of the sore is not destroyed. I have seen so much evil, in this respect, from the use of this escharotic, that I have now abandoned its use under such circumstances, and have recourse to other caustics of a more powerful character.

The great evil in the use of the nitrate of silver in these cases is, that it is powerful enough to irritate but not sufficiently powerful to destroy. We want a remedy that will at once disorganise the tissue to a depth coequal with that of the chancre. For this purpose I now employ several remedies: highly concentrated nitric acid, the acid nitrate of mercury, the acid nitrate of silver, or the potassa cum calce of the London Pharmacopœia. The second of these remedies is made by dissolving a drachm of the subnitrate of mercury in an ounce of nitric acid; the third by dissolving the same quantity of the nitrate of silver in the like quantity of acid.

When it is determined to destroy a primary venereal ulcer with any of the three first caustics, a camel-hair pencil must be dipped in them, and the surface and edges of the sore pencilled thickly over; if the acid be sufficiently concentrated, the whole surfaces touched are at once destroyed, and converted into a yellow eschar, which, on separating, generally leaves a clean simple sore underneath.

When the potassa cum calce is employed, which is the most certain of all the remedies I have mentioned, it must be made into a paste of moderate consistency with spirits of wine, at the time it is

wanted for use, and the sore and its edges covered with it. When it has been on a few seconds, a smart burning pain is felt, which continues to increase as long as the caustic is suffered to remain on, which it should be from half a minute to a minute, or even longer, according to the effects produced. After this the caustic must be all removed by means of a fine bone spatula, and the black eschar left may be covered with a poultice, a cold saturnine lotion, or fine, soft, dry lint. The pain soon subsides after the caustic has been removed, and in about half an hour the patient is generally pretty comfortable. The aggregate amount of pain produced by the application of this remedy is not as great as that by the nitrate of silver, whilst the effect of the potassa cum calce is certain; all the parts touched by it are at once destroyed, and, on the separation of the eschar, we have a clean granulating sore left, which commonly heals with great rapidity, particularly if the ulcer be a recent one.

Of all the means hitherto recommended for the destruction of a primary venereal sore, none are equal to this. The effect is instant and certain, and the benefit to the patient incalculable.

A poultice is the most convenient and best application during the time the eschar is separating, if the patient can rest, which should always be urged upon him as an essential point, if it can possibly be managed. The moment the eschar begins to be detached, and a secreting surface is exposed, the poultice must be done away with and other remedies employed. Of these, weak lotions are the best. I employ weak solutions of the nitrate of silver, acetate or sulphate of copper, alum, or zinc, or tannin in port wine, in the proportions of about two drachms of the former to six ounces of the latter.

There are certain conditions of primary venereal ulcers which contraindicate the use of the caustic in the first instance. If an ulcer of this kind produce violent inflammation of the penis, this must be reduced by a proper general treatment before we have recourse to these remedies, which may be used after the inflammation has been subdued, if the sore be foul, and stationary, and show no disposition to heal.

Whenever a patient consults you with a primary venereal ulcer, particularly if it is the first from which he has ever suffered, point out to him in as strong terms as you can the necessity of his adhering rigidly to a very abstemious diet till the ulcer assumes a granulating condition; it is well, also, at this period, to administer repeatedly, for some few days, aperient medicine, and to insist on a total abstinence from malt liquor, wine, or spirits. If your patient, from circumstances, cannot lie by and rest altogether, press upon him the advantage of retiring early to bed—rest in bed being a most important auxiliary in the treatment of all forms of primary syphilis. It is very easy to regulate all these matters in the hospital; but in private practice, to which I am now more particularly referring, such means cannot always be adopted; and I am afraid their extreme importance and advantage are not always stated in as strong a manner as they should be to the patient.

Whether it be your intention to submit your patient ultimately

to mercurial treatment or not, these preliminary cautions should never be omitted. Many of the evils attendant on mercurial courses are to be attributed to not preparing the patient by diet, rest, and aperients, for the administration of this medicine. I am far from subscribing to the tenets of those who treat syphilis systematically on what is termed the rational or simple plan without mercury; but I must bear so far testimony in favor of this school to say that they have conferred an immense advantage upon society by pointing out that diet, rest, simple dressings, and an antiphlogistic regimen, have a vast influence over the ravages produced by syphilis; and wherever you exhibit mercury for the cure of syphilis, more particularly its primary forms, let your concomitant measures relative to diet and regimen be these which the rational school teaches, and I have just laid down.

If you administer mercury for the cure of a primary venereal ulcer do not have recourse to it till your patient has been prepared to receive it by adopting, for some days, the regimen laid down, and till all inflammation produced by the action of the escharotics has subsided; you may then use it with every hope of realising its most beneficial effects. To throw it carelessly in without these precautions, under a vague impression that mercury is a specific for syphilis, is worse than injudicious; it is criminal, and cannot be too much censured. Let me you, Gentlemen, that there are no specifics except such as become so by their judicious employment.

One of the most common and unpleasant consequences of primary venereal sores is bubo, inflammation and enlargement, with or without suppuration, of one or more of the superficial or deep-seated set of the inguinal glands. Many causes will predispose a patient with a primary venereal sore to the occurrence of bubo. Amongst these may be mentioned a bad habit of body at the time of contracting the infection, a previous disposition to glandular enlargements, a scrofulous constitution or taint, full or high living, with errors or irregularities in diet; such predisposing causes may be termed general. There are others which we may denominate special—such are the long continuance of the primary ulcer in an indolent or ulcerating condition, the use of stimulating or irritating dressings, much exercise either on horseback or foot, and the absence of the suspensory bandage.

It is of vast importance to prevent the suppuration of a bubo, since matter once formed and evacuated is often succeeded by sinuses and troublesome ulcers, which are exceedingly tedious and difficult to cure. In hospital practice we can commonly succeed in dispersing a bubo, because we can make the patient do as we choose; but in private practice, where concealment is necessary, it becomes a more serious matter.

When, as a consequence of a primary venereal ulcer not yet healed, or just healed, we perceive enlargement with tenderness in the groin producing stiffness when the patient walks, we may be sure that a bubo is about to form. I would not recommend you at

this period to follow the old-fashioned praetiee of applying leeches; it is a practice generally very unsatisfaetory, rendering your eure long, uncertain, and tedious; you must insist upon a strict regimen on the part of your patient, and absolute rest, if possible. You may smear the part thickly over with mereurial ointment, over this a linseed or a bread poultiee, eold, and a pieee of oiled silk to keep it moist, confining all by a bandage. Pressure may also be made by the emp. ammoniaei c. hydrarg. spread on thick wash leather, the plaster to be placed lengthways parallel to the thigh, and not at right angles with it; this prevents the plaster getting displaeed when the patient walks. The best means of all, however, is to paint over the enlarged gland night and morning with a strong solution of iodine in hydriodate of potass.

Iodine, one seruple; Hydriodate of potass, two seruples; Water, one ounee.

The effeet of this is almost magieal. In the intervals of the dressings pressure should be made by a pad and bandage. If the patient has not used mercury for the treatment of the primary sore, the dispersion of the bubo will be hastened by now administering it so as gently to affect the system—always presupposing that the patient is in a eondition to bear mereury.

Should these means not succeed (which in a majority of instanees they will), and suppuration appears inevitable, hasten it by all means in your power by warm poultiees and fomentations.

When matter is ready to be diseharged, a question of very great importanee suggests itself—viz., how should this be done? Many surgeons open the abseess freely with the bistoury or lanеet, whilst some prefer the potassa fusa for this purpose. I would not under ordinary eireumstanees reeommend either of these methods.

When a bubo is ready to puneture, I would not advise you to open it by a free ineision; for almost under every eireumstanee where this is praetised, there is a quantity of integument in the edges, whieh will not unite with the granulating surface of the sore thus produeed. By opening an abscess in this way the whole anterior wall of it is destroyed, and your eure must be performed by the eieatrisation of a granulating surfaee whieh springs from the floor or posterior wall of the abscess. Your great object is to evaeuate the matter first, then to diminish the disposition to its reformation, and lastly to proeure union of the two sides of the cavity. This may generally be done in the way I have adopted in the treatment of chronic abseesses in the Queen's Hospital, and which you have seen so suceessful in a great many instances. When a bubo is ready to be opened, you should not suffer the skin to beeome too thin; when you praetise this method, with a fine lanеet make several very small punetures over the thinnest part, perhaps six, eight, or ten, through these the matter will ooze out till the eavity of the abseess is empty. Through one of the punetures the point of a very small glass syringe may be introduced, and a very weak solution of the sulphate of zinc

injected, in the proportions of two or three grains to the half pint of water. When the abscess is quite empty, place over it a large compress of lint, and use moderately tight pressure by means of a roller. In many instances, if you can keep your patient quiet for twenty-four hours, you will get either partial or total adhesion of the sides of the bubo, and a speedy cure will be the result; in other instances this may not be the case, but by the daily use of the injection through one of the punctures, which should be kept open for that purpose, you will succeed in a few days, in almost every case, in effecting a cure.

I generally employ for an injection in these cases the weak solution of sulphate of zinc. I have used also a weak solution of iodine in hydriodate of potass.

Iodine, four grains; Hydriodate of potass, eight grains; Water, eight ounces. An injection.

The injections must be varied in strength to suit the feelings of the patient, or a gentle warmth and slight irritation should be experienced, but violent pain on no account produced. Solutions of the sulphate, or acetate of copper, alum, port wine with tannin, may all be used; and if one does not succeed quickly, have recourse to another.

This is the best way of treating a suppurating bubo with which I am acquainted. I hope soon to lay before the profession generally a memoir on the treatment of chronic abscesses, after a similar manner.

Provincial Medical Journal, April 1, 1843, *p.* 4.

66.—ON LATERAL CURVATURE OF THE SPINE.

By James Syme, Esq., Professor of Clinical Surgery in the University, Edinburgh.

[The object of this paper of Mr. Syme's is to point out the kind of case in which an operation for spinal curvature may be useful, and to discourage the operations which are recommended for all other kinds of spinal distortion. We cannot always be sure whether the bones or muscles are the first cause of lateral curvature. The muscles may be so weak as to allow the spine to bend, and the bones may at the same time be so unhealthy that an undue pressure may cause a premature distortion. All the operations which have been recommended for these lateral curvatures are at least very doubtful in their efficacy, if not positively injurious, and there is only one kind of spinal distortion which it is proper to attempt to remedy by subcutaneous incisions, and that is spinal curvature depending upon wry-neck caused by contraction of the sterno-mastoid, which muscle is liable to contraction both spasmodic and permanent. Although spasmodic contraction does not generally affect the shape of the spine, the permanent contraction may do so very materially.]

Wry-neck, like club-foot, is sometimes congenital, but much more frequently, like squinting, and the *pes equinus*, occurs during childhood, in connection with some inflammatory or feverish state of the system. It depends upon a contracted state of the sterno-mastoid muscle, which has usually the feeling and appearance of a tense cord stretching from the clavicle to the ear. The head is bent towards the side affected, the face being turned in the opposite direction. Until the introduction of subcutaneous incision, the treatment of this complaint was very defective, since it consisted either in the use of mechanical support, which did little, if any good, or in cutting across the contracted muscle, together with its superjacent integuments, which was a painful and bloody operation, leaving a large sore, slow to heal, and apt to renew the evil during cicatrization. The subcutaneous process requires merely a puncture of the skin, is not attended with pain or bleeding, needs no dressing or after-treatment, and at once affords the relief desired. The following is the first case on record of its performance in Great Britain, which I extract from my tenth report of the Edinburgh Surgical Hospital.

"*Wry-Neck depending on Contraction of the Sterno-Mastoid remedied by Division of the Muscle.*—Matthew Cullen, aged six, Dunbar, admitted November 2, 1832. The head was much inclined to the left side, and could not be elevated, owing to the rigid contraction of the left sterno-mastoid, the sternal part of which felt like a tense cord. The complaint had existed upwards of twelve months, and had resisted blisters, with other similar means of remedy. In these circumstances, it was thought necessary to divide the contracted part of the muscle. This was effected by entering a sharp-pointed narrow knife a little to the inner side of its tracheal margin, about an inch above the clavicle, and then pressing the blade against the tense fibres. A sudden snap, which shook the patient's frame, was immediately perceived, and all trace of the contraction disappeared. The knife was withdrawn, and the small puncture occasioned by it in passing through the skin afforded the only perceptible indication of what had been done. No pain or other bad consequence followed, and the cure might be regarded as at once complete."—*Ed. Med. and Surg. Journal*, p. 115.

In the case just related, the disease existed in its simplest form, and without any affection of the spine, which is seldom wanting. It proceeds from involuntary elevation of the shoulder on the side affected, to lessen the strain on the head. This necessarily gives the dorsal part of the spine a corresponding convexity; and the lumbar portion bending in an opposite direction, to preserve the balance of the trunk, there results a lateral curvature, in no respect different, so far as regards appearance, from its ordinary condition. I was asked, along with Sir Charles Bell, to see a young gentleman suffering from lateral curvature. Finding the right sterno-mastoid very much contracted, I proposed to divide it, and did so with the effect of redressing the spine immediately, so that before we left the house the youth was walking straight.

But if the distortion be permitted to continue, it sooner or later, as in the ordinary form of the disease, leads to alteration in the shape of the bones. The bodies of the vertebræ are compressed, and the sternum projects. In this case, of course, the operation cannot afford the same instant relief that follows its performance while the curvature depends merely upon muscular action. The head, however, is at once set free, to the patient's great comfort; and through the gradual improvement of time, the trunk, unless arrived at full maturity, may in a great measure regain its proper conformation. A few weeks ago, I saw, with Mr. Cruickshank of Hill Place, a young lady from this neighbourhood, on whom I performed the operation in January 1841. The back and ribs were then so much distorted, that I hardly ventured to hope for much improvement, especially as the patient was nearly twenty years of age. It was therefore an agreeable surprise to find, instead of the low, thin, sallow, crooked, sickly-looking girl I had formerly seen, an erect, fresh-coloured, happy, healthy-looking young woman.

There is still another condition of the complaint, of which I may mention an instance that came within my notice last summer, in the case of a boy who was brought from the country on account of lateral curvature. Observing that his head inclined to one side, I examined the sterno-mastoid, and found it, not tense and rigid as I expected, but soft and yielding. I perceived, however, that when an attempt was made to raise the head, the muscle resisted and became tense, and therefore concluded that it was the seat of the evil. Under this impression I proceeded to divide it, and succeeded in doing so, though with more difficulty than usual, from the want of tension, for which it was necessary to compensate by stretching the neck. A good effect was immediately perceptible, and the following day the patient's back was comparatively straight, which it has since, I am informed, become completely.

In concluding these remarks, it may be well to warn against mistaking for wry-neck depending upon muscular contraction, the distorted position of the head which proceeds from caries between the occiput and atlas. The latter disease, like the former, usually occurs in young persons, presents to a careless observer similar symptoms, and if confounded with it, leads to treatment not only useless, but extremely injurious. A young gentleman had for twelve months used friction and exercise under the instruction of a distinguished member of the profession, who supposed that he laboured under wry-neck from contraction of the sterno-mastoid. No benefit having been experienced, it was thought that an operation might be serviceable, and with this view I was asked to see the patient. He presented all the characters and well marked symptoms of *spondylarthrocace*, or caries at the occipito-vertebral articulation, in a stage so advanced, that there was nothing left for me but to explain the nature of the case and predict the fatal termination, which soon afterwards happened.

Lond. and Edin. Monthly Journal of Med. Science, April 1843, *p.* 271.

67.—NATURE OF SOME RECENT SUGGESTIONS FOR THE IMPROVEMENT OF OPHTHALMIC PRACTICE.

By Robert Hamilton, Esq., M D., F.R.S.E., Fellow of the Royal College of Surgeons, and Surgeon to the Edinburgh Eye Infirmary, &c.

[When we reflect on the very great attention which is paid to Ophthalmic Surgery in Germany, we ought to look with great respect on any opinion which its eminent professors entertain, however different that opinion may be to our own. Dr. Robert Hamilton, in his recent tour of observation on this subject, amongst the German schools, has been particularly struck with one general mode of practice almost peculiar to them, which is, the choice of seasons, and of fine weather, for operations on the eye. This care in the selection of seasons is certainly not attended to by British surgeons. We may mention the names of Lawrence, Middlemore, and Mackenzie as advocating operations on the eye without any particular reference to states of the atmosphere. Mr. Tyrrell, on the contrary, says, "I am perfectly satisfied that the operation of cataract is most hazardous during the cold and damp seasons; so much so, that it is only under very particular circumstances that I ever operate in the period from October to March. The proportion of unsuccessful cases has been very much lessened since I have discontinued to operate in the cold and damp periods of the year." Dr. Hamilton met with other eminent ophthalmic surgeons in London, whose names he does not mention, who fully accorded with this opinion. The opinions of some of the German profession will be best expressed by Dr. Hamilton himself.]

One of the first individuals with whom we conversed upon the point in Germany, was the well known Dr. Louis Stromeyer, formerly professor of surgery in the university of Göttingen, and now professor at Munich, and surgeon to its excellent and truly elegant hospital. Upon stating to him that there were some oculists in London who were now declining to operate during winter, he expressed his surprise that it should ever have been otherwise, and remarked, that this abstinence had always been the rule in Germany; and upon our, in turn, exhibiting some little astonishment, and perhaps even incredulity, he desired us to inquire of his venerable colleague, Philip von Walther, under the persuasion that contined scepticism could not withstand his high and unexceptionable authority. A second individual with whom we conversed in the Bavarian capital, was Dr. W. A. J. Schlagintweit, an old pupil of Professor Beer's at Vienna, and one of the most popular eye practitioners in Munich. He did not talk of the matter in altogether the same decided tone; but at the same time stated, that patients rarely presented themselves during the winter; and that they would not then operate, as the reflection from the snow was apt to act injuriously:—"If the weather," he said, "were mild in the months of October and November, I would not decline to operate; but in frosty, or in keen, or variable cold weather, or in the heats of summer, I would never

think of it." In Vienna, we had ample opportunities of pressing our inquiries, and found the responses there were habitually the same. Our friend, Dr. Kaskowski stated, that the rule was not to operate, or rather not to perform any of the greater operations during the winter; but that this method of putting the matter was objectionable, as it did not give prominence to the principle which influenced them, and which was, that unless the weather were steady and good, and promised to continue so, they generally preferred waiting for more favourable circumstances. Thus, there might be three months in the depth of winter, and as many in the height of summer, when, from the intolerance of the heat, and the tendency to various epidemics, they would be disinclined to operate, unless there were some urgent call for it; and on such occasions they would exercise a double portion of watchfulness and circumspection to guard against unfavourable consequences. Dr. Gulz again, Professor Rosa's assistant, to whom we were indebted for a course of privatissima lessons, put it in this way,—"We have no formal or positive rule not to operate at any period of the year. But then, as a matter of fact, we don't like to do it during the unfavourable and trying seasons of the year, nor in fact, do we then operate much. Good and steady weather, with an agreeable temperature, is what we desiderate; and every thing that interferes with this—the cold and snowy weather of winter, the piercing and chilly blasts of spring, or the very hot season, or a very wet one, we try as much as possible to avoid; and hence, May and July, September and October, are the months we prefer; so much so, that the practitioners in the country, and even the peasants, are aware of our preference, and very much conform to it." In addition to all this, he stated that one of their most decided contra-indications against performing these operations, was the prevalence of almost any epidemic, such as catarrh or influenza, rheumatism, fever, or cholera, as the constitution of the season was apt to affect their cases injuriously. The only other German witness we shall adduce on this point is, Dr. Adolphus Winter, the assistant of the illustrious Ritterich, and the house-surgeon of the beautiful Ophthalmic Institution of Leipzic. He stated that, although it would be carrying the matter too far to say, that they never operated in the winter time, and though they would do so at any time, if circumstances required it, yet it was true that they operated very little between the months of October and March, both included; herein agreeing, almost to the letter, with the statements of Mr. Tyrrell.

And as with the German authorities, so, to a considerable extent, is it with the French. Among the authors of this nation, Dionis, Wenzel, Delpech, and Dupuytren, all advise that care should be taken in selecting a proper time for their operations, avoiding the extremes of heat, cold, and wet; in illustration of which, we shall here produce only the words of the Baron Dupuytren:—"Le Professeur attache la plus grande importance à ne jamais pratiquer l'extraction de la cataract sans avoir étudié soigneusement les circonstances atmosphériques, les influences de la température, et la

constitution médicale regnante. Chacun sait qu'il est des temps où les ophthalmies sont extrèmement communes, et il est très probable que l'opération serait alors suivie d'accidents inflammatoires."

Finally, upon this point, we may mention that some of our old English surgeons were very particular in this matter, and selected the season, and attended to the weather with great care and caution; in proof of which we shall only select the following stanzas of the ingenious Banister, published in 1622, from Mr. Middlemore's instructive page (ii. 124).

> " Couch cataracts upon a day so fair,
> That neither winds nor clouds disturb the air,
> When spring with smiles fills the earth's rich lap,
> Or autumn makes the tree put off his cap;
> The moon in the full, or in conjunction sly,
> Or tracing Aries, or in the Gemini."

Here then, undoubtedly, is a strong body of testimony, domestic and foreign, all witnessing for the propriety, and the importance, of paying the greatest attention to the season of the year, and the state of the weather, at which the principal operations upon the eye should be performed, and condemnatory of the present prevailing practice in this country, of undertaking them at all times of the year indifferently.

We observe, then, that all those well-marked conditions of the weather, which, in popular language, are characterised as *extremes*, by being far removed from that state which is steady and agreeable to the feelings, such as extreme cold, and extreme heat, and, still more, extreme changeableness, as well as unusually damp weather, seem to bring along with them various influences which, in different ways, are apt to affect the human frame. Most of these influences seem, moreover, to act in two ways; both in a more direct and immediate, and also in an indirect method, by inducing well-known and defined diseases. If the weather be intensely cold, such an effect is produced upon our feelings and frames, that universal experience indicates that more than wonted care must be taken, by clothing and otherwise, to guard against the attending risks and dangers. Again, when the weather is extremely hot, a degree of lassitude attacks almost every one, the appetite becomes impaired, feverishness supervenes, sleep is disturbed, and the nights become restless. Remarks of a similar nature might be made concerning very damp weather, proverbial for its gloomy dulness, and for those lowering effects which it produces upon the health and animal spirits; while sudden changes from one of these states to another, only multiply the risks to which each exposes us.

[But "What really are those eye cases in which the consideration of time and season" ought to guide our opinion? Those for Cataract, Artificial Pupil, and Staphyloma.]

For the removal of cataract, as is well known, three operations differing somewhat in principle, are now practised, *Extraction*, *Solution*, and *Displacement*. The first of these is generally considered

at once the most difficult, and the most perfect operation; and in its performance, pre-eminently, all the caution which can be exercised should invariably be observed. Our chief object being to enforce this lesson of caution, and impress upon the less experienced, that though the account of the operation may be simple, yet the execution is difficult; and that undertaken off-hand, and without the most minute attention before, at the time, and after the operation, much suffering, and failure, will probably be the consequence, we shall bring under notice a few of the instructions we received in Germany, concerning the indications and contra-indications for Extraction, which, however apparently minute and insignificant, ought to influence the surgeon in making up his mind, whether he will attempt to afford relief by this, or by some other of the proposed methods.

It is regarded almost an axiom at the Vienna school, that if the case be well selected, and the operation be adroitly performed, Extraction is, beyond comparison, the most satisfactory procedure for all concerned. At the same time, it is maintained that it requires considerable skill and practice; so that when individuals are so placed, that they have not every advantage, they are then prone to look about for arguments against it, and for reasons why other methods should be preferred; which, in reality, amounts to the admission that Extraction is too difficult an operation for them. Hence the rarity of good extractors, and these being almost confined to capitals, and other large cities, and to few even in them; hence so many preferring the other operations—seldom or never having recourse to this one; hence also the many objections brought against this operation, which those who are skilful in its performance know nothing about, finding it truly successful, and free from injurious consequences.

[In Berlin, the speculum and in a great measure the fingers are dispensed with for the purpose of elevating the upper eyelid.]

The elevation of the upper lid, to which our present remarks apply, in many instances is the most important, and can always be done by an assistant. The substitution for the speculum is managed in this way. The assistant, standing behind the patient, commences the retractation of the integuments, fascia, and anterior fibres of the occipito-frontalis muscle, upon the forehead, by means of the fingers of both hands, advancing inch by inch, till he has reached, and somewhat passed the superciliary ridge, by which time the upper eyelid is under his finger, and all that is required is gained without giving uneasiness, the upper part of the globe being freely exposed, and the edge of the eyelid, and its lining membrane, instead of being irritated and bruised by the speculum, are never once touched by the finger. Thus the painful and more important parts of any operation are begun under favourable auspices, a point which may be regarded trifling by some in this country; not so, however, we can affirm, in the school of Jüngken.

One other suggestion belonging to the same class of minute care-

fulness, we shall adduce in the words of Mr. Tyrrell, a gentleman who at present stands pre-eminent, in this country, for his success in operating for cataract:—"Some persons," remarks this gentleman, "have such a habit of rubbing or pressing the eye, that it is best to confine the motions of the hands, after the operation is finished, by tapes fixed by one extremity to the side of the bedframe, and by the other to the wrist, and of sufficient length to allow the patient to convey the hand to the mouth, but no higher. I have several times known," he adds, "mischief to occur from the want of precaution of this kind"; a recommendation which we have nowhere else seen either advised or practised.

Respecting the treatment of cataract by *Solution* of the lens, it is certainly an operation of much less risk than that of extraction, and yet a measure of care should be taken even here. In some degree as illustrating this, and conspicuously, the more general subject under review, we may mention another proposal which was first made, we believe, by Mr. Tyrrell, and which we know is now practised by the officers of the London Royal Ophthalmic Hospital. We have noticed above, that one of the indications for the operation of extraction, is, that the cataract should be small, as well as hard. This, however, is not always the case; and when the lens is large, the gentlemen alluded to have adopted this kind of compound operation. During the latter autumn or winter months, weather permitting, they perform the operation, in such a case, as if for solution only; making their incisions in the capsule, and of the lens, in the gentlest way; not with the expectancy that this will eventually remove the indurated cataract, but solely in the anticipation, that, during the course of the intervening months, in which, for the reasons above assigned, they would have done nothing at any rate, the aqueous humour may exert its influence in removing the softer parts of the lens, whereby its size will be reduced as desiderated, for effecting the extraction in summer, at once without risk, and with facility and success. This appears to be an excellent suggestion.

And lastly, with regard to the operation of *Couching* or displacement, which, notwithstanding all that has been alleged in its favour by the French, we consider, with the Germans, the most objectionable of the three, so frequent are the immediate injurious effects, and still more those which are apt ultimately to follow, that we conceive every care and caution should invariably be employed in its performance. Of course, we mean not to deny, that, frequently, it is the most appropriate method; but when we consider the damage done to many important parts by the common operation, we cannot wonder it is often followed by long protracted and afflictive suffering. How far the modified method of practice long extensively followed by Mr. Egerton in Calcutta, and so successfully adopted by Mr. Morgan in London, will meet this objection, we cannot say, though this proposal is well worthy of the most attentive consideration.

Lond. and Edin. Monthly Journal of Med. Science, March 1843, *p.* 204.

68.—ON THE USE OF NITRATE OF SILVER IN CERTAIN OPHTHALMIC AFFECTIONS.

By M. Desmarres, Professor of Ophthalmology in Paris. Translated from the Gazette des Hôpiteaux, by Dr. Camp.)

[We confess that we should be afraid to follow the practice of M. Desmarres, with respect to his peculiar mode of using nitrate of silver. We give his own views on this subject, because we presume that his practice in this branch of surgery is sufficiently extensive to make his opinions of some weight.]

The question we would first propose to ourselves is, what is the action of the nitrate of silver on the membranes of which the eye is composed. If it be employed *weak*, it diminishes the vitality of the organ, lessening the vigour of the circulation, and, as to its action, it may be compared to the action of cold water applied to our tissues. If, on the contrary, it be employed *strong*, it acts as other caustics, whose action has great analogy to that of intense cold, in the sense that they arrest, as does this latter, the circulation in parts affected by obliteration of the vessels in a greater or less degree.

If we endeavour to observe at first the action of cold water on our tissues, we find, "that when applied to any region, it constantly determines, but in different degrees, a revulsion of the blood towards the deeper parts of the body,—an effect made evident to the observer by the decoloration, the coldness, and the diminution in volume, of the part, the capillary circulation of which is slackened, and its vitality lowered. This driving back of the blood towards the deeper parts presents variations in its continuance proportionate to the continuance of the action of the cold water on the region where it has been applied, and as soon as this is discontinued, the return of the blood whence it had been expelled by the influence of the cold, is accomplished with a force which is in relation to the degree of temperature of the water itself, and of the tendency which the region preserves to undergo congestion afresh. We say, then, that reaction takes place, a state which it is important to avoid, since it acts in the same sense as the dynamic condition which we seek to control by the application of cold water,—unless, indeed, it be applied externally, with a view to excite this same reaction. The circulation is then seen to be active in that part, as the redness, the swelling, and the elevation of temperature, plainly demonstrate."

If, now, we study the action of intense cold, we see that it acts in the same manner, but with more energy, and in direct proportion to its intensity.

Is it necessary at present to develope more at length this idea, namely, that there is a similitude of action on our tissues between astringents and cold water, between caustics and intense cold?

As to caustics, do they not destroy the parts they touch? In this their action does it not resemble, in some respects, that of in-

tense cold, which, like them, produces an eschar, a true gangrene, local and circumscribed, which varies in the rapidity of its formation, its colour, its extent, its thickness, its density? In pursuing our idea, do we not arrive at the conclusion that we have sought? That the nitrate of silver acts as astringents, or as cold water, if it be weak—or as caustics, and as intense cold, if it be strong. Then, if we employ it weak, or as an astringent—that is to say, as we employ cold water—it will be necessary to take certain precautions, so that the reaction so serious in diseases of the eye do not supervene, as it would infallibly in a limb submitted during an hour, for example, to the application of cold water, which is suddenly discontinued.

It is easy now to imagine what would infallibly happen, but by the most happy chance, when, in an inflammation of the external tunics of the eye, without intolerance of light (a lymphatic conjunctivitis, a superficial vascular inflammation of the cornea, an atonic ulcer, &c.,) we prescribe a weak astringent collyrium to be applied by some drops daily. The blood feebly and momentarily expelled from the capillaries, soon arrives there again with a force and rapidity in inverse proportion at once to the astringency of the collyrium, and to the frequency of its instillations into the eye. This organ, from the moment when the first drop of collyrium is introduced, becomes injected throughout, and the parts, healthy until then, submitted to its action, react in like manner to the parts diseased, resist sometimes a first application, and resume their normal colour, but soon actually inflame, if the instillations are repeated, especially at considerable intervals. Thus the conjunctiva reddens, then inflames, the sclerotic coat becomes covered with vessels, the pupil contracts, photophobia and epiphora supervene, and all the serious chances of a violent external ophthalmia, very often of an internal ophthalmia more or less intense, with their troublesome consequences, remain to the practitioner. It is then necessary to have recourse to the antiphlogistic treatment, particularly to free bleedings, to oppose this terrible reaction, which might have been prevented by a better treatment, and to which, now, the limits cannot be assigned. Am I deceived in stating, that it is precisely because attention has not been directed to this reaction hitherto that the administration of the remedy has so often failed in cases where it was notwithstanding indicated?

In general, I do not employ the nitrate of silver in a very weak form, for the reasons above given, because the reaction is so much the more to be feared as we employ remedies less strong. It must not be supposed, however, that I administer it as a caustic, as the partizans of the ectrotic method recommend, for I have known that it is better always to preserve a proper medium between these two extremes. The reason of it is, perhaps, in the first, that an eschar once formed removes the subjacent tissues from the action of the collyrium, and that nothing then hinders further the reaction from compromising all. We may judge of it, besides, by the swelling of the cyclids which in this case follows the application of the caustic. The strength of the collyrium which I employ varies

from 40 to 90 centigrammes of crystallized nitrate of silver to 10 grammes of water. These proportions reduced to English weights are as follows: namely, 7 to 15 grains of nitrate of silver to $2\frac{1}{2}$ drachms of water, according as the photophobia is less or more, according also as it is more or less recent, as in inveterate scrofulous ophthalmic affections, for example, cases in which we act more vigorously at first. In this proportion the collyrium but seldom whitens the mucous membrane of the eye (this, however, sometimes happens with the eyes of very young children, but then I take care to diminish the strength of the nitrate of silver, recommending more frequent instillations). This done, the most important indication to attend to is to prescribe to the patient repeated instillations into the eye, every half hour during twenty-four hours without interruption. In some rare cases it is necessary to go on with the instillation every quarter of an hour during the first two or three hours of the treatment. I take care to forewarn the patient that, during these two or three hours, he will experience considerable pain, because this is the usual period necessary for tolerance to become established; but that after that time the pain will become very supportable, and will be followed by evident amelioration, which is invariably the case. In this manner the diseased eye is not liable to reaction, because the force of repercussion acting in a continued manner, maintains the vessels in a state of contraction which this reaction is unable to overcome. If I can see the patient five or six hours after the instillation of the first drop, I judge by the state of the organ whether or not the reaction tends to supervene, and then, if not, I continue; if it do, on the contrary, I increase the strength of the collyrium, one and a half, two, or three grains of the nitrate of silver. If I cannot see the patient until after twenty-four hours, I prescribe immediately a collyrium a little stronger, and I have nothing to fear. In some cases, in which I cannot trust to the perseverance or the good will of the patient, I recommend fomentations of iced water to assist the action of the collyrium. However, I ought to say this has but seldom occurred to me in more than sixty cases. After twenty-four hours, reaction does not supervene, but the intolerance of light is not always subdued completely, although the injection of the external tunics of the eye is usually diminished; and in this case, as in the other, I increase the strength of the collyrium, and after forty-eight hours, rarely more, the ophthalmia is at its second stage—I mean the acute form no longer exists. Then the instillations are repeated less often—every hour, for example; at length discontinued, and then replaced by a general appropriate treatment.

Medical Gazette, March 10, 1843, *p.* 860.

69.—TINCTURE OF IODINE FOR THE LIDS IN CONJUNCTIVITIS.

[The last volume of the Retrospect (p. 201) contains an article by Dr. Hocken, bringing before the profession the practice of Mr. Wormald, of St. Bartholomew's Hospital, of applying the nitrate

of silver to the outside of the eyelids in cases of strumous ophthalmia; and gives some very interesting reasons why this mode of applying it should be so successful. Dr. Furnivall, Physician to the General Infirmary at Hertford, thinks that he is equally successful by applying in the same way the *Tincture of Iodine*, which may be made rather weaker than the common strength for children with fine skins. Dr. Furnivall states that this practice has been exceedingly beneficial; the distressing lachrymation in strumous ophthalmia is soon relieved, and in many cases ulceration of the cornea was arrested. The tincture may be applied by means of a small camel-hair pencil, painting it over the outside of the upper and lower lids, taking care that it does not enter the eye itself: this may be repeated two or three times a week according to circumstances.

Dr. Hoeken's explanation of the cause of intolerance of light seems to be correct. His opinion is, that this intolerance is not owing to any affection of the retina, but to the ophthalmic division of the fifth nerve, which supplies sensation, nutrition, and secretion to the eye and all the other contents of the orbit, and overrules the functions of the lachrymal gland. He believes that the retina itself is in direct communication with the fifth through the medium of filaments distributed with those of the optic nerve, not as Magendie thought, as the actual nerve of sight, but as the source of common sensibility to light, and the medium of impressions on the pupil through the lenticular ganglion. (See Retrospect, vol. VI., p. 201.)]

Lancet, Dec. 10, 1842, *p.* 405.

70.—CREASOTE IN DISEASES OF THE CORNEA AND CONJUNCTIVA.

By Dr. Hildreth, Tancsville, Ohio.

[Dr. Hildreth was induced to try this remedy in combination with other means, in several obstinate cases of ophthalmia which had resisted the ordinary methods of treatment. He concluded that as it had been found of great service in affections of the skin and mucous membranes in other parts of the body, it might have a beneficial effect on the coverings of the globe of the eye. He first used the creasote in 1836, in a case of opacity of the cornea the result of scrofulous ophthalmia, which had existed three or four years. The cornea of each eye was of a pearl white, interspersed with red vessels, there were also numerous small ulcerations over the surface of each cornea, the eyes were nevertheless very sensitive to light. All the usual means were had recourse to,—alterative catharties, tonics such as iron and quinine; a tolerably liberal diet with exercise in the open air; the daily use of the saline bath followed by vigorous frictions of the skin. Under this treatment the intolerance of light became less, and the nitrate of silver was applied to the conjunctiva both in substance and in solution (11 grains to the ounce), but still the eyes improved so slowly as to be very discouraging to the parents.]

The remedies appeared to have lost their influence, and the extreme repugnance of the child to the caustic, had compelled them to abandon it. I then prescribed the strong mercurial ointment, half an ounce, to be intimately combined with fifteen drops of creasote. A small portion of this to be introduced under the upper eyelid when drawn off from the globe, and then brought in contact with the cornea, and rubbed over the whole conjunctival surface; to be repeated morning and evening. This prescription had a much better effect than any previously in use.

During the first week of its use, there was a perceptible improvement of vision. The effused lymph under the conjunctival covering of the cornea, or between its laminæ, began to be absorbed; the enlarged vessels under the strong astringency of the remedy, began to diminish in calibre, until under its continued use they disappeared entirely. This combination was continued for two months, occasionally adding a few drops of creasote, to maintain its strength. At the expiration of this time, all trace of inflammation or ulceration had disappeared from the eyes; but the patient was found very near-sighted. Concave glasses have, however, in a great measure overcome this defect.

Did the limits of this paper permit, many other cases of scrofulous ophthalmia, both acute and chronic, might be cited, which were promptly cured by the creasote. As we have prescribed little else, as a topical application in strumous cases, for several years, we can speak positively as to its efficacy, when combined with the proper constitutional treatment. As creasote is acknowledged to be one of our best remedies in various eruptive diseases, as well as ulceration of the external integuments, and mucous membranes, we should naturally expect some advantage from its use in scrofulous ophthalmia. For in this disease also, we have usually a distinct pustular eruption, succeeded by ulceration.

In all cases of scrofulous ophthalmia, whether acute or chronic, we have found the creasote a most effective remedy, in connection with the proper constitutional treatment. It should be applied to the eye of such a strength, that the burning or smarting pain from it shall not continue more than *five minutes after its introduction.* If much inconvenience is felt from it for a longer period, the ointment containing it must be diluted with simple cerate, or fresh lard perfectly pure.

The more chronic the case, the more creasote will be required and borne. My usual prescription is from ten to thirty drops to the ounce of strong mercurial ointment; more than this may, perhaps, be required in some very chronic cases, where the eye has become somewhat insensible from long continuance of active stimulants. Should the remedy prove too irritating, frequent bathing the eye with warm milk and water, or the introduction of a few drops of cold cream into the inner canthus, will soon destroy its effect.

As creasote evaporates rapidly, the ointment must be kept air tight, otherwise a few drops must occasionally be added to preserve its relative strength.

One decided advantage of the creasote over caustic in scrofulous ulceration of the cornea, is its facility of application. The ointment can be introduced under the eyelid, and rubbed over the whole globe, when it would be found impossible to persuade the child to submit to the repeated application of the caustic in substance to each separate ulceration or opacity. We believe, also, that it will be found more efficacious in reducing vascularity, promoting absorption, and healing ulceration if applied of the proper strength.

As disease of the meibomian follicles, or ophthalmia tarsi, is almost invariably present in cases of scrofulous ophthalmia, the creasote ointment will prove a most excellent remedy for this complication. For this purpose, however, we have found its combination with red precipitate ointment a better preparation.

When psorophthalmia is of a very chronic character, we have no substitute for the pencil of nitrate of silver, applied directly to the diseased follicles.

Granular conjunctiva is another disease of the eye, which is very frequently overlooked by the general practitioner. This is the more unfortunate, as it is a disease of very frequent occurrence. It will, no doubt, be found, on careful examination, that a large majority of the cases of vascular albugo, or nebula, of a chronic character, are either produced or perpetuated by this lesion.

Notwithstanding its frequency, I have known the most respectable practitioners treat cases of opacity of the cornea, accompanied by this change of structure, for months and years, without ever everting the upper eyelid.

The treatment consists in the removal with the knife, of vascular excrescences, or the surface of the conjunctiva itself, if very exuberant: frequent scarifications, and touching the whole diseased surface every two or three days, with nitrate of silver, or sulphate of copper in substance, counter-irritation by tartar emetic, or blisters, &c.

The preparation of creasote, and blue ointment, or in combination with red precipitate ointment, (if the case be very chronic), will also be found a most valuable adjuvant. The strong astringency of the creasote, will tend to reduce the increased vascularity of the surface, while the mercurial will materially assist in the reduction of enlarged glands and follicles.

Should vascular albugo or nebula accompany the diseased membrane, its stimulant, astringent, and sorbifacient virtues will prove still more valuable. It should be applied in the manner before directed in scrofulous ophthalmia; and continued until the mucous surface becomes smooth and polished. If we stop short of this, the eye will be left very irritable, and any exposure will tend to reproduce the disease, with its accompanying inflammation, and opacity. We have also found the creasote applicable to many of the diseases of the conjunctiva, and cornea; for which the nitrate of silver is the standing prescription of the best authors. In simple inflammation of the conjunctiva, or puro-mucous conjunctivitis, we have not prescribed it, until the inflammatory symptoms have yield-

ed to antiphlogistic and other remedies. In purulent ophthalmia, however, it may be used earlier, in conjunction with the active constitutional treatment advised in the books.

In these cases, however, we are not aware that the advantages to be derived from its use, will exceed those of other topical applications of established efficacy.

In the scrofulous eruptive disease of the cornea, in vascular opacity, and superficial ulceration, we have found it a decidedly better remedy than the nitrate of silver; but in dense opacity, or leucoma, and in deep penetrating ulcers when we fear perforation of the cornea, and escape of the aqueous humour, we believe the nitrate in substance the better application.

In many of the chronic diseases of the external tunics, we are in the practice of combining the use of the nitrate of silver and creasote, with most excellent results.

In fine, we are quite confident the creasote will prove a very valuable addition to our stock of remedies for diseases of the eye.

American Journal of the Medical Sciences, Oct. 1842, *p.* 364.

71.—ON A VARIETY OF FALSE ANEURISM.

By Robert Liston, Esq., F.R.S., Professor of Clinical Surgery in University College, &c.

[The following is Mr. Liston's account of this unfortunate case. We think that this excellent surgeon has been ill used by the reflections which have been thrown upon him. If such an acute observer could commit an error of diagnosis, how careful ought all other surgeons to be in operating on this particular part of the body. He proceeds as follows:]

My attention has lately been particularly directed to the subject of communications between large blood-vessels and the cysts of abscesses, in consequence of having, a few weeks ago in my hospital practice, met with a remarkable case in which the carotid artery opened into a large abscess in the neck. My conviction has always been with those who hold that "there is often more of instructiveness in an unfortunate case than in a fortunate one;" and, accordingly, I venture to lay the particulars of the case referred to, before the society, as not altogether devoid of practical importance, and therefore of interest to the members. I have referred to other cases in confirmation of my views, and have thrown together a few remarks suggested by a consideration of the subject generally.

Hæmorrhage from the cyst of an abscess, to a slight extent, often follows the evacuation of its purulent contents, more especially when the operator evinces an anxiety to empty the cavity as far as he possibly can, by forcibly squeezing and compressing its sides. The blood is then furnished by the vessels of the lining membrane, whose connexions with its bed are broken up; the bleeding in other instances is attributable to the loss by the vessels of their accustomed

support. In either way the cavity is filled with blood, which may ooze from the opening for a time; but coagula are formed by and by, and breaking down at last, are discharged with the secreted pus. Bleeding from abscesses may also take place from vessels, arterial or venous, wounded in the operation of opening them. All such effusions are in general speedily arrested, by attention to position, and by pressure applied over the opening or to the surface of the abscess. Larger arterial trunks on which abscesses encroach, are generally well protected by a deposit of coagulable and organised lymph around and about them, so that hæmorrhage from them is comparatively rare; the nerves, on the contrary, are often stripped of their cellular sheaths, and their fibrillæ are macerated and detached. Occasionally, however, all the parts in the neighbourhood of an abscess appear to be dissected, the coats of arteries among these becoming denuded by the extension and pressure of the purulent deposit. The requisite supply of blood to the coats of the vessels is thus diminished or entirely cut off, and as a consequence, ulceration and sloughing, with perforation from without, ultimately occur. This has happened in some instances before the matter had wrought its way to the surface, and before the opening had been made by the surgeon. In other cases, again, the vessel has given way some time after the pus had been evacuated. In the cases which have come under my notice, the abscess has lain beneath the vessel, which has been pushed forwards upon the cyst, and put very much upon the stretch. This stretching of the vessel, together with the natural tendency of purulent matter to the surface, may so far account for the giving way of its parietes. Under any circumstances such an occurrence as the perforation of a large artery by ulceration is very alarming, and calls for the best directed and most energetic efforts of the attendants to prevent an immediately fatal result. But the existence of a communication between a large vessel and the cyst of an unopened abscess, it may readily be conceived, cannot always be easily ascertained. The history and progress of the swelling, indeed its situation, form, &c., will all generally be very different from those of a true aneurism; still there may be no signs, or if any, very slight ones, of the existence of a communication with an arterial trunk. In cases of large abscesses, the contents of which have been partially evacuated, and into which blood is afterwards poured, so as to distend the sac enormously, the surgeon may perhaps for a time be led to think that the bleeding is from some inconsiderable branch, and may only at last be convinced of the danger to which his patient is exposed, after repeated hæmorrhages have taken place from the opening. Perhaps the blood escapes at first from a minute aperture in the vessel, and drains but slowly into the cyst. It coagulates, and by slight pressure on the opening, the flow is arrested. But as the ulceration extends and the opening enlarges, or as the patient rallies and the circulation becomes energetic after each renewal of hæmorrhage, the bleedings occur more frequently, and in a more alarming way, and cease only upon the patient falling into a state of complete syncope, or upon accurate

pressure being made over the trunk of the vessel from which the blood is flowing, at a distance from the disease. The first case, the particulars of which I shall detail from the records of the house, occurred a short time since in University College Hospital.

Case I.—G. A., æt. nine, had been a healthy infant, but about six years ago he suffered from severe illness, and was left in a very reduced state. About two months back he had a violent cough, together with considerable fever; at this time a small swelling was first observed in the neck, immediately below the right ear; this was merely fomented and poulticed. It increased gradually and slowly until within three or four days of his admission into the North London Hospital, when its progress became more rapid and its shape irregular. He presented himself October 20th to Mr. Liston, at the usual visiting hour, having a tumour at the angle of the jaw on the right side, extending backwards as far as the posterior border of the sterno-mastoid muscle (the upper part of which was pushed forwards), downwards to within an inch of the clavicle, and forwards to about half the length of the horizontal ramus of the lower jaw. It projected into the mouth between the arches of the palate, impeding in a great degree both respiration and deglutition. Its most prominent point was posteriorly and superiorly at the outer border of the sterno-mastoid. Indistinct fluctuation could be felt, and there was slight pulsation in it immediately over the carotid artery; but on grasping the sides of the tumour no pulsation could be discovered, nor could any be felt inside the mouth. Mr. Liston made a small puncture into the tumour under the impression that it contained matter; a gush of arterial blood followed the operation, and about four ounces were lost in a few seconds; the wound was closed by hare-lip pins and twisted suture, and the bleeding thus checked. Mr. Liston determined to tie the carotid on the following day.

October 21. No hæmorrhage during the night, but cold was constantly applied, as the tumour seemed to be very tense. This morning the carotid was tied. The patient being placed on the operating table, an incision about an inch and a half in length was made transversely over the sternal extremity of the clavicle, and another upwards, at right angles to the first incision, over the trachea. A V-shaped flap was turned upwards and outwards; the sternal attachment of the sterno-mastoid being exposed, was cut across; the muscle was very black, as if the sheath were occupied by effused blood. The sterno-hyoid and thyroid muscles were next exposed, after some dissection. A small vein was cut, which bled freely, but after a little time this hæmorrhage ceased without the application of a ligature. The muscles over the trachea were then cut across, and after a troublesome dissection the carotid was exposed a little above its origin from the innominata, and tied. The great difficulty of the operation arose from the necessary smallness of the incision. The tumour projected downwards so low in the neck that it was impossible to extend the incision upwards; and the artery, which appeared to be at a very great depth from the surface, was to be

sought for at the bottom of a small hole. The flap was laid down, and retained by some isinglass plaster. The boy complained very little after the operation. The swelling very soon became firmer and less tense, and the movements of the jaw, which before were much restricted, were now more free and less painful. The pupil of the right eye, which before was contracted and partially insensible to light, was now restored to its proper functions. The patient slept soundly all the night following the operation.

Nothing particular occurred till

November 3rd.—Five P. M. A few minutes since, while the boy was eating a piece of bread, a sudden gush of arterial blood took place from the wound in the fore-part of the neck, the ligature being still firm. The hæmorrhage was suppressed by plugging the wound with lint. A considerable quantity of blood was lost. Hæmorrhage returned six times after this; the last one left him in a state of perfect collapse, from which he never recovered, and on November 5th he died at five P. M.

In the *post mortem* examination there appeared considerable fulness on the whole of the right side of the neck, but much less than shortly after the operation. Pressure caused a quantity of dark grumous blood to ooze from the tumour. The lymphatic glands were found enlarged and matted together by lymph:

The ligature was found to have been placed close to the origin of the carotid from the innominata; it was not completely separated, a small portion of the external side of the artery still remaining entire. The proximal end of the vessel was quite open, and admitted a large sized probe; there had been no attempt at the formation of a clot, or, if any had been formed, it must have been expelled with the blood. The distil end of the vessel was sealed by a firm coagulum, and around the situation of the ligature was a considerable deposit of firm lymph. The arteries arose from the arch in the usual manner. The dissection in the superior part of the neck was now proceeded with. The parotid and sub-maxillary glands, &c., and the side of the lower jaw having been removed, a large tumour was brought into view, extending from the side of the trachea and pharynx, outwards as far as, or a little beyond, the external border of the sterno-mastoid; upwards to the base of the skull, and downwards to about an inch below the bifurcation of the carotid; behind it was limited by the spine and its muscles. Over the anterior surface of the tumour could be traced the carotid artery, free to within three-quarters of an inch of its point of division, where it became firmly connected with the swelling. Both the external and internal carotid were connected to the tumour for about an inch from their division; the internal, however, was the more intimately attached. The internal jugular vein passed over the anterior aspect of the tumour, but the vagus nerve was found to issue from behind. Both the internal and external carotid were now cut through, the former at its entrance into the bony canal in the temporal bone, and the tumour was dissected from its situation, turned downwards, and, together with the heart and arteries, removed from the body.

An incision was then made into the posterior part of the tumour, which was found to contain a quantity of dark grumous blood, external to which was a thin layer of organized lymph which entirely lined the parietes of the cyst. A probe was passed down the internal carotid artery, and found to enter the cyst just opposite the division of the common carotid; this point was, however, obstructed, a mass of coagulable lymph almost entirely blocking up the entrance. The parietes of the tumour behind were about a line or more in thickness, but on the outer side, on the aspect adjacent to the puncture, they were much thinner. They appeared to be composed of three layers differing in character, but organically connected together. The outermost layer consisted of condensed cellular tissue having portions of the surrounding structures attached to or imbedded in it. The middle layer, which was not so evident on the outer side of the tumour, was very dense and opaque, so that it appeared like a distinct white line on a section of the parietes of the tumour. The innermost layer was soft and pulpy, semi-transparent, and of a pale dirty red colour; its inner aspect, forming the inner surface of the cyst, was smooth, and for the most part even; but in some points, and especially at the posterior part of the cyst, it presented a fasciculated appearance like the interior of the auricles of the heart, or of a fasciculated bladder, only not so well marked; it consisted, as I have said, of a flaky lymph-like substance throughout. Opposite the outer part of the tumour (where its parietes were thinnest), this substance was flocculent and broken, and contained patches of a bright yellow colour; here it was not distinctly laminated, and it adhered rather firmly to the middle layer of the cyst, but in other situations it was easily separable into laminæ, and was not so firmly adherent. The cavity of the cyst contained a quantity of grumous blood. The common carotid and the internal and external carotid were firmly attached to the front of the tumour. The opening by which the cyst had communicated with the artery, had been about three lines wide and two and a half lines long, and was situated at the bifurcation of the common carotid. It was now completely closed by a firm clot, in which no perforation was visible, so that the probe which had been passed down the internal carotid into the cavity, must have been forced either on one side of this clot or through it. On the side next the vessel, the surface of the clot was concave, broken in the centre, but smooth towards the circumference, where it was closely adherent to the margin of the opening in the carotid artery. The opposite side of the clot was convex, and projected into the cavity of the cyst, On making a vertical section through the artery, the walls of the tumour, and the clot, the latter was seen to be composed of fibrinous laminæ. The edges of the opening in the vessel were found to be well defined and slightly everted; the external coat of the artery was distinctly traced, and afterwards dissected from the middle coat quite up to the margin of the opening, where it terminated abruptly, not being reflected on to the inner surface of the tumour. The coats of the vessel showed not the slightest dilatation at the part

where it was connected with the tumour. The vagus nerve descended in front of the tumour on the outer side of the internal and common carotids. On coming into contact with the tumour it was much enlarged, and was firmly connected with the outer and middle layers of the wall of the cyst. The filaments of the nerve were spread out, and some of them were merely separated from the cavity of the cyst by the internal soft pulpy layer; the nerve passed off again from the lower part of the tumour. A portion of the spinal-accessory nerve was attached to the outer side of the tumour, and the superior cervical ganglion of the sympathetic was deeply imbedded in its posterior surface.

Dublin Journal of Medical Science, Jan. 1843, *p.* 374.

[The following case is published by Mr. Alexander King, of Glasgow, and will in some measure bear out the opinion of Mr. Liston. Another case, somewhat analogous, is narrated in the appendix to Mr. Liston's recent memoir, *On a variety of False Aneurism*, by Professor Fergusson, of King's College. "In that, as in the present case, no operative interference was resorted to, in consequence of the debility of the patient, and the child died suddenly of hæmorrhage, which was found, on dissection, to have taken place from an ulcerated opening in the lingual artery, near its origin from the carotid." Mr. King's account is as follows:]

On Saturday the 12th November 1842, I was invited by Mr. John Brown, surgeon, whom I met accidentally in the street, to accompany him to visit a patient, of whom he afterwards gave me the following account.

Sixteen days before, a boy, aged four years, who had previously enjoyed excellent health, and was stout and well-formed for his age, was seized with symptoms of pyrexia, followed by the eruption of scarlatina, which disappeared in a few hours, without any obvious cause. Very considerable constitutional disturbance followed, and on the second day a diffused swelling appeared on the right side of the neck, below the lobe of the ear, considerably impeding deglutition and respiration, and giving rise to an incessant tickling cough.

The swelling for some days remained stationary, but eventually evinced a tendency to suppurate, and after the application of poultices it pointed and burst, three days before our visit, leaving an opening into which a No. 8 catheter could be introduced. A quantity of pus was discharged; the swelling gradually subsided, and everything seemed to proceed to a favourable termination, till about five minutes before our arrival, when the girl who was holding him, observed blood running down his breast from underneath the dressings, and on removing them to ascertain whence it proceeded, two jets were propelled forcibly upon her face and cap.

On removing the cloths which had been applied to arrest the hæmorrhage, we found blood still flowing in a free stream from the opening already described; the walls of the abscess were very tense, about the size of a hen's egg, which, according to the mother's

account, was larger than before the abscess first gave way. It occasioned considerable difficulty in breathing, and gave rise to occasional severe paroxysms of coughing, during which it became excessively firm and prominent.

Pressure on the carotid did not, in any manner, alter the state of the tumour, and pressure directly applied to its walls immediately brought on a fit of coughing, but did not appear to displace any of its contents. The pulse was extremely quick and feeble, and occasionally intermitting; the countenance was pale and blanched. Uncertain from what source the blood escaped, we resolved to apply a compress and bandage to support its walls, and allow coagulation to take place, but we found that when the bandages were applied tightly, the child's breathing was considerably impeded, and almost incessant coughing took place, so that we were compelled to apply them less accurately than we could have desired.

During the afternoon, hæmorrhage again occurred, and Mr. Brown required to apply additional compresses. We both visited the patient again at mid-day on Sunday, and found the tumour had increased in every direction, and more compresses were needed to suit the altered circumstances of the case; but it was now evident, from the attenuated condition of the part of the walls which we saw, that such mechanical means would soon prove ineffectual in restraining its contents, as coagulation had evidently taken place to a very limited extent; however, the debilitated condition of the child, and the uncertainty of the injured vessel, dissuaded us from operative interference. We therefore resolved to give a further trial to pressure, and left directions to send for Mr. Brown, whose residence was within a few yards, should hæmorrhage occur.

We again visited the patient about seven o'clock the same evening, and found that the tumour had still farther increased, and had impeded the respiration to such an extent, that the parents had found it necessary to loosen the bandages a little.

We agreed to remove the compresses and bandages, so as to ascertain exactly the state of the tumour, and if it gave way (for which occurrence we were fully prepared), to restrain the hæmorrhage by making pressure on the injured vessels with the finger, and afterwards secure it with a ligature.

When the bandages were partly removed, the child was seized with a violent paroxysm of coughing, during which the anterior wall gave way, to the extent of two square inches. A thin coagulum, about the size and thickness of a crown piece, was ejected, followed by an immense gush of blood.

I instantly introduced the first two fingers of my right hand into the opening, and surrounded the fingers and the tumour with cloths, and very little blood was afterwards lost, although my fingers could not get either to the upper or lower orifices, in consequence of the lower part of the tumour being covered by the parotid gland, and sterno-cleido-mastoid muscle.

When my fingers were first pressed into the abscess, I felt blood flow freely downwards from above, and propelled upwards with

great force, during each forcible expiration. A state of syncope followed in a few seconds, and he expired shortly afterwards.

Dissection, ten hours after death.—The swelling had entirely disappeared, and the skin, which had previously covered the tumour, had contracted in every direction, so that it could hardly be conceived that so much distension had ever existed.

On dividing the integuments, from the lobe of the ear, to the middle of the neck, we found that the tumour, to a certain extent, had been divided into two sacs, which communicated very freely. The one extended below the digastric muscle and parotid gland to the base of the skull; the other having the parotid gland for its posterior wall, the sterno-mastoid muscle for its external, the platysma fasciæ and skin for its anterior. On cutting through the substance of the parotid, which was sound and healthy, and the posterior belly of the digastric muscle, a very distinct view of the source of the hæmorrhage was obtained. Nine-tenths of an inch of the external wall of the *internal jugular vein*, commencing two lines below the base of the skull, and extending downwards, was completely removed, as if by a sharp scalpel. The internal wall, and even the margins of the opening, were perfectly healthy, and of the normal pearly white colour. The common carotid, at its division, was exposed by removing a little healthy cellular structure, and showed no appearance of disease. The walls of the abscess were examined in every direction, and found to be healthy, and an incision, two lines in depth at any point, displayed the surrounding structures in a natural state.

We were not permitted to examine the viscera.

This case was surrounded with many difficulties. The most probable source of hæmorrhage was a rupture of some of the branches of the external carotid, but pressure upon that vessel having no effect upon the tumour, we did not consider ourselves justified in applying a ligature below the site of the disease. Indeed the child was so exceedingly exhausted from other causes, that there were no reasonable grounds for indulging a hope of saving its life, even although the hæmorrhage could be checked, without the infliction of any additional shock on the system, and it is fortunate, as the result shows, that no such operation was performed. We might have laid open the tumour, searched for, and secured the bleeding vessel, and, but for the debilitated condition of the patient, this procedure would have been followed; but as it was evident, from the state of the pulse, that the loss of a very trifling additional quantity of blood would prove fatal, we considered it most judicious to endeavour to effect coagulation. The regurgitation of the blood from the right side of the heart, during the act of coughing, rendered our attempts abortive.

I do not consider that the child's life could have been saved, even if we had possessed the fore-knowledge of the state of parts which were displayed on dissection.

A ligature could not have been applied between the laceration and the base of the skull, even granting that the internal jugular vein could be tied with impunity.

On our first visit, the tumour had exactly the appearance of a neglected abscess. The distension and colour of the integuments would have induced us at once to give relief by an incision, had not the small opening referred to, existed, and had such a mistake been committed, I do not think the hæmorrhage could have been even temporarily arrested, in consequence of the attenuated condition of the walls. The case presents a striking proof of the danger likely to occur, from rashly opening abscesses in the vicinity of important vessels; and, in the locality of this tumour, it is feared that strumous abscesses are every day laid open, after a very cursory examination.

Lond. and Edin. Monthly Journal of Med. Science, March 1843, *p.* 177.

72.—ON WHITE SWELLING OF THE JOINTS.

By M. Lisfranc, Paris.

[Lisfranc distinguishes white swellings into those in which a sub-inflammation exists, and those in which no trace of this is present. He thinks that]

They are in error who state that the mere *engorgement* of the soft parts can always be easily distinguished from an enlarged condition of the bone. He long believed erroneously with others, that a firm or flinty consistence of the swelling was necessarily a proof of an affection of the osseous system. In such a case he now hesitates before he ventures an opinion—especially if the tumour do not present an irregular surface. By suitable treatment the induration often becomes moveable upon the bony parts—these last remaining nearly or quite healthy. In such cases, the disease has proceeded from without inwards—the deeper-seated soft parts being those last affected; and, hence, yielding to the means employed, they have become soonest cured, and the more external tissues, remaining indurated, are moveable upon them.

" There is one peculiar form of white swelling, which, I believe, I was the first to describe. The joint is but little increased in size, and the swelling gives, when touched, the sensation of an elastic or spongy body, such as the spleen or placenta, or a lipoma about to undergo degeneration. Here and there are formed small but very numerous abscesses, separated from each other. When these burst there is discharged, with the pus, a flocculent matter, produced by the death of the tissues involved. I have as yet never been able to cure any of these cases. At the autopsies I have found a lamellated tissue, traversed by a great number of vessels, and containing white granules, resembling tubercles. This tissue was absent at the points wherein the little abscess had cicatrized, being replaced by ordinary inodular substance."

He enquires whether it would, in these cases, be prudent to employ means to increase the inflammatory action, and thus expedite the suppurative process. The peculiar tissue in question is at first

superficially placed, and might it not be removed by operation, when it occupies but a limited space?

In cases of white swelling it is very important to be assured of the condition of the thoracic and abdominal viscera; for, where diseases of any of these exist, they have sometimes been found to make progress in proportion as the affection of the joint becomes amended—even requiring that irritation should be reproduced in the latter. When the visceral affection is incurable, but stationary, we do not treat the white-swelling actively, unless it become dangerous; and, in fact, we may have to pay our attention especially to the external or internal malady, as either may become alarming, and, by this temporizing conduct, may often succeed in prolonging the days of the patient, when they would be cut short by a more vigorous procedure. Unfortunately the thoracic and abdominal affections are often *latent*, and resist our means of investigation,—so that, death may speedily follow the cure of the disease of the joint, in consequence of some unsuspected organic affection. Whenever the disease of the joint, without any obvious cause, undergoes many vicissitudes, so that, from being nearly cured, it relapses into as bad a state as ever, we must suspect something wrong in the system, although no special symptom be present.

Abscesses, formed *around* the white-swelling, should be opened as promptly as possible, while, when formed *within* the substance of the engorgement, exit must be given to the pus as late as possible—providing the inflammation be not acute—that there be no danger of the pus penetrating the joint—and, that the skin be not denuded of cellular tissue. It is very easy to be deceived as to the existence of pus—while the sojourn of this fluid in contact with the indurations proves to be one of their most powerful solvents. The most experienced surgeons often have great difficulty in deciding whether a collection of fluid or pus be situated within, or external to the joint. The alternative of amputation decides the surgeon in determining to open the collection, and, if symptoms follow which denote that the cavity of the joint is exposed also, he proceeds at once to amputate.

M. Lisfranc considers that, in general, much too little importance is attached to *regimen*, in *chronic surgical disease*. The ordinary, and sometimes an excessive diet is permitted, and the great aid in dissipating engorgements, derived from allowing patients, in some degree, to, what he calls, "live upon their own substance," (*i. e.* a starvation regimen) is lost sight of. He has repeatedly known these tumours, which have resisted every other means, to become dispersed after diminishing the diet one third or a half. Exceptions will occur to this, when the patient is excessively feeble or scrofulous, and when the digestive organs suffer from the change.

If the patient be strong, and any acute inflammation exist about the joint, one or more bleedings from the arm, and afterwards leeches, will be required. But the periods of employing these must not succeed each other too rapidly—for chronic diseases by their duration frequently induce great debility; and inflammation, seated in

these anormal tissues, is not suseeptible of the same ready removal as when it oeeurs in healthy ones. Local emollient and anodyne baths, continued for two hours at a time, are useful. Although, by appropriate means, the inflammatory element may disappear in a month, it may persist in other cases for three, six, or nine months, and, to such cases, whieh may also have resisted mercury and barytes, we must oppose time, and the continued application of small relays of leeches. Eventually the moxa may be employed. It is rare indeed to find one of these swellings dissipated by antiphlogistics alone. A slight diminution of volume only results from the subsidenee of inflammatory aetion.

After the employment of antiphlogisties, an interval must be allowed prior to commeneing the use of stimulants—but the presenee of oeasional pain, or pain whieh has resisted depletion, must not deter us.

Leeches may be applied for other than the ordinary reasons. From three to six, or eight, placed around the base of the tumefaetion, will cause a degree of heat and excitement in the swelling, when torpid, and favour absorption.

[The leeehes may be repeated in this way several times, taking care that the bites do not bleed for more than a quarter of an hour, for fear of the debilitating effeets. Cupping may be substituted, and aets as an antiphlogistic or stimulant, aeeording to the quantity of blood drawn.]

Compression is useful by preventing the too free aceess of blood to the tumour, and causing a slight degree of excitement at its surface. It is most advantageously applied so that it may extend an inch beyond the circumferenee of the tumour. If employed in improper cases, it may oeeasion inflammation or gangrene; and, in all, requires regulation in its various degrees, aeeording to the stages and peculiarities of each. Thus the mere applieation of diaehylon, the use of bandages and agaric, and the applieation of leaden plates to the part, exeite different degrees of compression. The eompression may be re-adjusted every twenty-four hours, and its employment does not exclude the use of iodine ointments, and the various internal remedies. Even after the tumour has disappeared, especially when of a seirrhous consistence, compression must be eontinued for several weeks longer.

It is to be rejeeted—1. When considerable inflammation exists. 2. When the tumour, though small, is very hard, unequal, knotted, adherent to the skin, and espeeially if this latter be red or discoloured. When, however, the scirrhous mass has been removed, we may employ pressure. 3. When the tumour is in some parts indurated, and in others pultaeeous.

The author believes Dr. O'Beirne's eonclusions, coneerning the utility of *salivation* in these eases, are too general, and too premature. This practiee is attended with great suecess, only when inflammatory action is present, although it even then requires the aid of other means to effect a cure, as, after a certain degree of amendment, the

case remains stationary. Mercurial inunction, carried to salivation, is equally useful as the calomel. When no inflammation of the part exists, the mercurial ointment, applied by topical friction, is an excellent solvent—but, when inflammation does exist, it must be applied in thick layers, to remain in contact with the part, as recommended by M. Serres, when it acts as an antiphlogistic, and not, as in the case of friction, as a stimulant to absorption. All friction with iodine ointments must be foregone as long as any inflammation exists. The ioduret of lead is the best preparation, but any that may be used requires watching, lest excitement to an injurious extent be produced. He has found iodine, and especially the hydriodate of potash given internally, very useful—particularly in scrofulous cases.

Blistering must not be employed when even sub-inflammation is present, being as it is essentially stimulant. If blisters are placed *upon* the tumour itself, when the skin is indurated or adherent, acute inflammation of a most obstinate character will be produced, and which would have been avoided by placing them in the vicinity of the part. When the blister occasions an injurious degree of inflammation, we must meet this with leeches, &c. We must judge of the ultimate effects they are likely to produce by the degree of irritation that results.

The application of the *moxa* follows the same rules as the use of blistering; and its repetition has been found useful in some cases, wherein amputation was imminently threatened. When a repetition is likely to be required, the moxa must be of only a small size—somewhat less than a shilling.

The *seton* is the most exciting of all exutories, and must not be employed until the inflammatory action has subsided. It should not be passed through the substance of the engorgement, but on one side of it. It is only to be employed when all other excitants have failed.

There are cases of white-swelling, which after proceeding well on towards a cure, remain, at length, quite stationary, treat them how we will. In these we must abandon all active measures, contenting ourselves with hygienic precautions; and sometimes in a few weeks, we may find the swelling much dissipated, and, even if still persistent, the various therapeutical agents will usually be resumed with much greater advantage, after such an interval.

M. Lisfranc states that, in his hands, the *muriate of barytes*, given in large doses, has been found very successful, the patient being also during its use confined to a vegetable diet, and water drink—upon which, however, he often gains both flesh and strength. He begins with six grains, and reaches, in some cases, as high as forty-eight grains per diem; while, at Marseilles, and in Italy, two drachms have been given in the same period. He alludes to many cases, in which the employment of this medicine has saved limbs, that must otherwise have been removed by amputation.

When the white-swelling dates from a *rheumatic* origin, it has been recommended to place an irritant, such as a blister, upon the joint itself. This practice is attended with the danger of fixing the

locality of the inflammatory action; and M. Lisfranc prefers, in the case of the knee-joint, *e. g.* placing the blister at the upper and outer part of the thigh; and in following this practice he has met with great success. In some of these cases, the pain which is so distressing, has disappeared under salivation, as if by enchantment.

After a cure the joint is not at once enabled to resume its functions. The patient has remained at rest during a long space of time, and pain attends his first movements. If this ceases in a quarter or half an hour, after attempting to walk, &c. we conclude it has been produced by mere disuetude; but supposing it is continuous, the patient must not yet abandon repose, and the various remedial means he has been employing.

Relapses were formerly very frequent, but M Lisfranc has found them to be rare, since he has given his patients a padded knee-cap to wear. This limits the movements of the joint, and supports it during their performance, prevents any stagnation of the fluids, and aids the resorption of any effusion that may occur. Atrophy of the joint sometimes follows, which may be persistent, or may disappear, as the general health improves.

Many cases are quoted to demonstrate amply the author's mode of treatment, concerning which he thus remarks:

"I am frequently asked by what plan I cure white-swellings: but these words offend my ear. I reply, that my method is dictated according to the various indications the cases present; and that under many circumstances, in order to obtain a cure, we are not only obliged to employ a great number of means simultaneously, but frequently to exhaust, as it were, all we possess. The disease may pass frequently from the acute to the chronic condition, and, in the majority of cases, the means which have at first produced great amendment, after a while, do not continue to do so, and require to be replaced by others."

Medico-Chirurgical Review, Jan. 1843, *p.* 88—93.

73.—ON CANCER.

By M. Lisfranc, Paris.

[This excellent surgeon has noticed, amongst other circumstances relating to cancer, that it seldom attacks at once all the various tissues of an organ:]

Thus, in the stomach, *e. g.* its ravages are sometimes confined to the mucous, to the cellular, or to the muscular tunic of that organ; and even when all the tissues seem equally involved, a careful dissection will usually point out which has become first affected. So, too, in the examination of the bodies of a great number of women who died of cancer of the breast in the Salpetrière, the pleura, though in contact with the disease, was found unaffected. These, and other facts induced the author to enquire, whether the ravages of cancer in an organ might not be curtailed, especially if its tissue

formed part of any peculiar structure, fitted to isolate the malady. If so, the removal of the superficies, performed in time, might save the remainder of the organ. He first put the idea into practice in a case of cancer of the penis.

He began his operation with what he calls an exploratory incision, in order to examine whether the corpus cavernosum yet remained in a healthy condition, so as to admit of the organ being saved. Finding this to be the case, he removed the cancerous part by a "long, painful, and difficult dissection," and the patient perfectly recovered, performing afterwards his generative functions in a satisfactory manner. In the next case, the testes and cord were laid bare by a laborious dissection, the penis almost detached from the body of the pubes, and the cancer pursued to the roots of the corpus cavernosum, which, "exposed, and as if prepared for an anatomical demonstration," shewed here and there signs of cancerous deposition that had to be removed by the forceps and scissors, the surface being afterwards well scraped with a bistoury. The cure was perfect, and the extent of cicatrization such as can only be imagined by those accustomed to the wonderful reparative powers of nature. Many cases, very formidable in appearance, have been similarly treated by the author. The same success has, also, often attended his operations for cancer of the tongue, the vagina, the lower extremity of the rectum, and the parts surrounding the orbit. Cancer of the *nose* almost always spares the cartilages, and by careful dissection, the ablation of the organ may be avoided. Moreover, the skin in the vicinity of the solution of continuity produced by this operation, possessing slight mobility, yields but little to the traction of the cicatrix—whence a cicatrization at a very small expence of integument results; and, by taking care to repress exuberant granulations with the nitrate of silver, very little deformity will ensue.

That cancer is not *contagious*, M. Lisfranc is entirely convinced.

He also denies that there is any *general infection of the system* in this disease. He supposes the disease arises from the development of a greater or less number of tubercles of a malignant nature, which, like ordinary tubercle, may be more especially confined to certain organs. As suppuration attacks and removes tubercles, not simultaneously, but in successive attacks, so cancer might be removed by several successive operations.

From observation upon man and experiment upon animals, M. Lisfranc believes that cancer may be produced solely by common irritating agents. Thus, ulcers, cicatrices, accidental tissues, frequently become cancerous when irritated, while instances of relapse after the removal of such, are very rare. Many persons are very liable to the formation of pimples upon the face, consisting of accidental tissue. No change usually occurs in these until old age approaches, when they either spontaneously ulcerate, or do so in consequence of the irritation of external causes. The pus is scanty in quantity, and, concreting into a thin crust, the patient takes no notice of it. But sooner or later the cancerous condition supervenes

if it have not already commenced with the first ulceration. Persons, who are liable to the production of permanent pimples upon the nose, should be careful in not exciting their cancerous degeneration by a too rough use of the pocket-handkerchief. Razor wounds in such subjects often produce dangerous ulcerations. As soon as ulceration occurs, if it be not yet cancerous, apply the nitrate of silver, following its use up by mildly stimulating dressings. Even when the ulcer is cancerous, caustic is sometimes used with good effect; but the author has seen such frightful aggravation result from its employment, that he prefers at once removing the part with the bistoury. If a superficial ulceration of a cancerous aspect be seated, not on accidental tissue, but upon a normal texture, somewhat indurated, it may be touched lightly with the liquid proto-nitrate of mercury—with the intention, however, rather of changing its mode of action, than of effecting the destruction of the tissues upon which it is seated. In this way you will usually effect a cure, especially if you have premised depletion, or afterwards employ it, if any inflammatory action seem to demand it. Fissures of the lips, which, when neglected, so frequently degenerate, rarely do so if they are touched with the nitrate of silver. The same substance is also very useful in the case of a slight erosion of the cheek, covered by a thin, greyish crust. The irritation produced in the faces of old persons, by the accumulation of the matter of the sebaceous follicles, may eventually terminate in cancer.

Whatever book-doctors may think, M. Lisfranc maintains that all experienced surgeons must deny that cancer is always well characterized. In this way he explains Desault's supposed cures of cancer of the rectum, and cites cases of apparently incurable cancer yielding to means seemingly inefficient. He observes, also, that we pronounce many ill-looking sores to be cancerous, merely from the localities whereon we find them, and that we should never so consider them if seen on other parts, *e. g.* the leg. It is well known, also, that syphilis frequently simulates cancer, and the author has often, in doubtful cases, employed anti-syphilitic remedies with the best effect.

[Lisfranc places more reliance on an operation for the removal of the diseased portions than most surgeons. He operates occasionally in the *advanced stage;* and even when the neighbouring lymphatic glands are enlarged, he will not always allow them to be an impediment to the operation, trusting to their dispersion by antiphlogistic treatment: as all enlarged glands are not cancerous, or even scirrhous.]

In a case of cancer, with or without ulceration, are we to consider the *whole substance of the tumour* as being occupied by scirrhus? While Lisfranc was pursuing his experiments on the cure of cancer by local bleeding, he observed the tumours so treated underwent a notable diminution at their circumference. This induced him to make careful pathological examinations in some fatal cases; and, although in a few of these, the whole tumour seemed to be com-

pletely occupied by the cancer or scirrhus, yet, in the great majority, the morbid change was confined to the centre. The scirrhous nature of the swelling gradually changed into the common inflammatory induration as the circumference was approached. From these facts he deduces some practical proceedings. Thus:—a cancer may be of too great an extent to admit of an operation, for the patient would succumb during the healing of the large wound, necessary for its removal. Leeches, proportioned to the degree of strength of the patient, must be applied around the base of the tumour, following them by a large emollient cataplasm, and enjoining a careful diet. As long as the constancy of the pain, and the augmented heat denote the continuance of sub-inflammation, these means must be repeated—the chronic nature of the affection, and the enfeebled state of the patient, however, admonishing us that their repetition must neither be too hasty nor too vigorous. In a few days we may have recourse to resolvent applications, and especially compression —yet avoiding the reproduction of inflammatory action. By such means, carefully adopted, and extended over a sufficient space of time, cancerous tumours have been frequently reduced at La Pitié from a size represented by 10, to one of 6 or 4; and, not only has the operation then become practicable, but no more than an ordinary wound has remained after its performance.

Again: a cancer may not be excessively voluminous, but it may involve such important parts as to render its removal difficult or impossible. By the means mentioned the lessening tumour retires from the vicinity of the nerves, vessels, &c., which may have presented the obstacles to the operation.

Some practitioners, observing the partial diminution of the tumour produced by these means, and ignorant of the principle upon which they have been recommended, reject the operation altogether, vainly believing that they can dissipate the cancer altogether in the same manner—thus giving time for the disease to make fatal progress.

After the operation for cancer the fingers must be carefully passed over the whole surface of the wound, by which means small tubercles, easy of removal, may be often felt—they sometimes being completely imbedded in the pectoral muscles. When very numerous they can rarely be completely extirpated, and when left they frequently give rise to the reproduction of the disease. In patients dying a few days after the operation, the author has found hundreds of these bodies, even under the scapula and clavicle, and upon the pleura.

Observation proves that cancer is liable to relapse, in proportion as its progress has been active, or it has been complicated with acute inflammation. This last is to be met by local depletion, continued for some days prior to the operation. Relapses will be less likely to occur, also, if half an inch of sound skin be included in the incision—leaving, however, enough integument, when it is sound, to procure union by the first intention, thereby diminishing the extent of irritation of the wound and subsequent cicatrix. The

surgeon's care of his patient must not terminate with the production of cicatrisation, but also be directed to the prevention of a relapse, which, when patients are docile enough to obey the directions given them, may usually be accomplished. They must be told, that, even when the wound has healed, the cure is only in part completed. All causes likely, whether mentally or physically, to interfere with the health must be sought for and removed.

In persons of a sanguine temperament, or when suffering from the obstruction of some flux, let bleeding be practised; and, if the parts in the vicinity of the cicatrix become congested, a revulsive bleeding of three or four ounces must be employed. The vitality of the susceptible organs must be modified by the use of powdered hemlock, (the extract usually being very bad,) for many months. Beginning with a grain every morning, the dose may be gradually augmented to four. Lisfranc has a very high opinion of this remedy, as a solvent and anti-nervine—and its utility is also well seen as the latter, in the gastralgiæ of women suffering from uterine affections. Occasional mild aperients, exutories, in case of retrocession, and, after omitting the hemlock, the external or internal use of iodine, are other useful means. Much good also results from compression, employed by means of agaric and a bandage, and extending beyond the cicatrix. The cicatrix must not be irritated, especially by too early a movement of the parts. The mildest diet, and, if debility be not present, even abstemiousness, should be enjoined.

Medico-Chirurgical Review, Jan. 1843, *p.* 66

74.—*On the Radical Cure of Varicocele.* By M. A. Vidal. The operation, as practised by M. Reynaud, was as follows. The operator seizes with both hands the diseased spermatic cord, seeks for and separates the vas deferens; then pinching up the scrotum with the fore-finger and thumb of the left hand, so as to embrace the spermatic vessels and nerves, he pierces the fold thus formed, at its base, with a curved needle armed with a waxed thread. The scrotum being let go, exhibits an interval of about an inch between the points of entrance and exit of the instrument; the two extremities of the thread are then brought together, and the ligature of the parts comprised in the loop which it forms, is conveniently tied upon a thick cylinder of linen, which is to be interposed between the knot and the skin. It is necessary to tie the ligature in such a way as to enable you easily to undo it, and loosen it in case the compression of the parts should be too great. Some simple dressing is to be applied to the punctures, and a light compress applied over the whole.

In a short time, some inflammation is developed in the parts touched by the thread and embraced by the ligature, but it is usually of short duration, and allows, in two or three days after the operation, of the ligature being tightened upon a new cylinder of lint, as the first is stained by the suppuration which begins to be established. If however the inflammation should extend, and the pain be great, the ligature must be loosened, and no fresh constriction employed

until, by the application of emollient cataplasms, this state of inflammation has been subdued, which will certainly be the case in the course of two or three days.

In proportion as the soft parts are divided before the thread which presses on them, and as they cicatrise behind at the same time, the ligature is tightened occasionally, and this is not difficult, if care has been taken in tying the ligature in the first instance. From the fifteenth to the eighteenth day, the vessels and nerves of the testis, as well as the tunics which envelope them, are divided, and the skin alone remains; M. Reynaud then, in order to leave no doubt as to the complete division of the vessels of the cord, introduces a blunt-pointed bistoury, and divides the portion of skin which the ligature had left.

A simple wound remains, and this rapidly cicatrises, so that at the end of twenty-five days from the commencement of the operation, the cure is usually complete.

The modifications of the above-described operation which M. Vidal has adopted, consists in employing, instead of an ordinary thread, a silver wire, of about the thickness of a fine pin. This metallic thread allows of the ligature being tightened or loosened, without undoing the knot. After being fastened over the cylinder of linen as before, it can easily be twisted so as to allow of any degree of compression. Instead of a curved needle, M. Vidal employs a straight one, as being more convenient, and in place of cutting the skin which remains between the two punctures, he withdraws the thread as soon as the vessels are completely divided.

When there is any fear of a relapse, instead of a single thread, two may be passed. at a distance from each other of about two inches. The upper one alone is to be tied; the other, the one nearest the testicle, is left loose; this is the ligature "*d'attente.*" This ought to be kept in as long as possible, as, if, after the first ligature has divided the veins, when the patient begins to walk about, any tendency to a relapse is observed, the second thread may then be tightened, and a radical cure ensured.

The author adduces two cases in proof of the success of this operation.

Not content, however, with employing the ligature in the above-mentioned cases, M. Vidal intends to employ this method of proceeding in cases of incurable tumours of the testicles and other parts similarly situated. Thus if the ligature does not produce a definitive cure of the tumour, it may check its further progress, and if it be a "*degenerescence,*" may prevent its propagation to other parts. In every case, it may be preparatory to an extirpation, giving a greater chance of success to this last operation. It will then be necessary to tie not merely the veins, but the whole cord, vas deferens, spermatic artery and nerves, *tout compris.* The success attending the ligatures which he has already attempted, makes M. Vidal presage as satisfactory a result for the ligature "*en masse.*"

With regard to this form of operation, however, the author owns that he has as yet had only two cases with any success, one already

published, and another which will be published hereafter. When a person has only two facts on which to rest a new doctrine on the treatment of tumours, M. Vidal thinks it as well to speak with some reserve! (With this last observation we cordially agree.)

Medico-Chirurgical Review, Jan. 1843, *p.* 271.

75.—*Iodine Injections in Hydarthrosis, &c.* By M. Bonnet, Senior Surgeon of the Hôtel Dieu, at Lyons. M. Bonnet has for the last two years being trying the effect of injecting a solution of iodine in certain affections of the knee-joint. Before relating his experiments, he states that the idea of treating hydarthrosis with stimulating injections is by no means a novel one. Boyer, in his large work, alludes so a case where camphorated Goulard water was injected; and more recently M. Jobert has related three cases in which he made use of a weak spirituous solution for the same purpose. Of late years, solutions of iodine have come into much favour as injections for hydrocele, and also for the fistulæ that are so frequent in the neighbourhood of diseased joints.

In puncturing a joint, the wound should always be as small as possible; and, in order that the introduction of the air may be prevented, the surgeon should first pinch up a fold of the integuments before introducing the trocar, so that the outward and inner wounds may not correspond with each other afterwards. The most convenient situation for making the puncture in the case of the knee-joint, is immediately above the patella; the limb should be fully extended at the time, in order that the articulating surfaces of the femur and tibia may be closely applied to each other. The fluid seldom flows out in a jet, as in cases of hydrocele, but only slowly and hesitatingly. It is unnecessary that the whole of it should be evacuated; indeed it is much better that it should not, and that a portion only be withdrawn. A useful precaution to prevent the entrance of the air is to keep the free end of the canula constantly pointing upwards. Solutions of iodine of very different strengths have been used as injections for hydrocele. M. Velpeau uses one part of the tincture and seven of water; occasionally the undiluted tincture has been employed. M. Bonnet used the diluted tincture in most of his cases of hydarthrosis; but then he took the precaution o discharging only a very small quantity of the articular fluid, leaving by far the greater part in the joint. Latterly he has preferred for this purpose a watery solution—1 part of iodine, 2 of the ioduret of potassium, and 8 of water—in order to avoid the possible coagulation of the articular serosity by the alcohol of the common tincture. The quantity injected should be very nearly the same as that of the fluid that has been withdrawn.

As the inevitable result of injecting a stimulating fluid into an articular cavity is an attack of acute arthritis, the surgeon must be ready to keep it within due bounds. In all my cases (of hydarthrosis), says M. Bonnet, the inflammation has subsided within a few days, and has never been followed by suppuration. A brief notice of these cases will be interesting.

Case 1.—A man, 28 years of age, was admitted into the hospital in September 1841. His health had for two years suffered much from living in an unwholesome damp situation, and also from the effects of obstinate secondary syphilis; latterly he had been affected with rheumatic pains in most of his joints. At the period of his admission, the left knee was much swollen from an obvious accumulation of fluid within the joint. Although there were no symptoms of inflammation, the pain was often excessive, especially upon any movement of the limb, so as to keep the patient from sleeping. A variety of remedies was tried; but none gave any decided relief. About five weeks after his admission into the hospital, I punctured the joint, says our author, with a trocar, and gave issue to a quantity (two *centilitres*) of serosity like that of hydrocele, and immediately afterwards injected 15 grammes of tincture of iodine, which I allowed to remain in. The pain produced was considerable, and, in the course of the day, the joint became swollen and very tender; the patient was restless and feverish during the night. But in the course of 24 or 36 hours, these symptoms abated, and then the patient experienced less pain than he did before the operation. By the sixth day, he was able to rise; and five days afterwards he could walk about the ward. The right knee now began to swell and be painful; and strange to say, as the left one became well, the other filled with fluid. On the 16th of October, twelve days only after the first operation, I performed the same manœuvre on the right, as I had done on the left joint. The inflammation that supervened this time was much more severe than on the former occasion, and indeed it was alarming. Forty leeches were applied round the joint, and then fomentations and poultices; but as the tension and pain became more and more severe towards evening, I determined to puncture the capsular ligament again: about two *centilitres* of serosity (which had no traces of iodine) flowed out through the canula. From this moment, all the suffering ceased, and, in the course of two days, the joint was not larger than it had been before the operation. So rapid was the abatement of all the symptoms that, after the lapse of another week, the man was able to leave the hospital, walking without difficulty, and quite cured of his double hydarthrosis. I have seen him repeatedly since, and find that the cure has remained permanent and complete.

(Surely the second operation was a most unwarrantable proceeding: to puncture and inject a large joint for a dropsy of a few days' standing!)

Case 2.—A young girl had been affected with dropsy of both knee-joints for three weeks, when she entered the hospital. She seldom suffered much pain in them, and she had always been able to walk, although with inconvenience. After a few days' residence in the hospital, both joints were punctured on the same day, and about 30 grammes of tincture of iodine were injected into each. The inflammatory re-action was intense; during the first night, the patient was restless, feverish, and now and then somewhat delirious; both joints were much swollen, and the integuments were hot, red,

and shining. For three days the acute symptoms continued; they then subsided, and the swelling began to diminish. At this time I had to give up attendance at the hospital for several days, and when I resumed my duties on the 8th of June (about three weeks after the performance of the operation) I found that the patient had left the hospital nearly quite recovered.

Case 3.—A woman, 27 years of age, had been affected with hydarthrosis of both knees—the consequence apparently of a fall from a tree—for two years, when she came under M. Bonnet's care in June 1842. After using blisters for a few days, M. Bonnet injected into each joint some of the following solution—1 part of iodine, 2 parts of hydriodate of potash, and 15 parts of water. The inflammation that followed was very intense; and for forty-eight hours the patient could not get a wink of sleep. On the third day the pain and swelling began to abate, and by the end of another week no fluctuation could be perceived, and neither joint was much larger than in health. In the course of a month, the patient was able to leave the hospital; the swelling had almost quite disappeared, but the walking still remained difficult, although less so than before the operation.

In the fourth case, in addition to the hydarthrosis, which was the consequence of chronic rheumatism, there was a good deal of œdematous swelling of the integuments, and also "des fongosités dans la cavité synoviale." The complaint was of three months' standing. About 30 grammes of serosity were withdrawn from the joint, and as much tincture of iodine injected. The inflammatory reaction was by no means very great; not a drop of fluid oozed from the wound. As the swelling of the part did not sensibly subside, the joint was again punctured and injected, about five weeks after the first operation. This time, the inflammation excited was more severe; but the ultimate result was "une guerison presque complète."

M. Bonnet, after describing another case, goes on to state that in no instance in his practice has the iodine injection caused suppuration of the joint or any other severe accident; the inflammatory action, although sometimes very considerable, almost always subsided in two or three days. There is every reason therefore to believe that many cases of simple hydarthrosis may be most successfully treated in the manner now described.—*Bulletin de Therapeutique.*

Medico-Chirurgical Review, April, 1843, *p.* 513.

76.—*On the Local Treatment of Chancres.* By Dr. Strohl. The more rapidly primary syphilis is cured, the less likely are secondary symptoms to appear. The first object is most easily attained by cauterizing. Sometimes, however, this method is inapplicable; for instance, when the sore is very extensive, or much inflamed. In such cases, the author employs the sulphate of copper. The sores are dressed five or six times a day with charpie, which has been soaked in a solution of about a grain and a half of sulphate

of copper to an ounce of water. Simple chancres, when thus treated, usually heal within twelve days. Dr. Strohl assures us, that he cures complicated chancres in an equally short time with an ointment composed of two grains of cyanuret of mercury to an ounce of axunge. This ointment is spread upon a piece of linen corresponding to the size of the sore. This dressing is apt to be painful at first; and it must occasionally be taken off, after it has been on for an hour or two, and the remedy must be applied in a weaker form. The pain is said to be most violent in half an hour or an hour, and frequently ceases entirely in two or three hours. When the chancre is extensive and painful, after the ointment has been on from four to ten hours, according to the sensibility of the patient, it is dressed with mercurial ointment, or opium cerate.

If the edges of the chancre have flattened, if the centre is cleaner, the pain less, and the suppuration healthy, (which may occur after the first application of the cyanuret of mercury, but, at any rate, not later than the fourth), the treatment with the sulphate of copper is finished.—*Oesterr. med. Wochenschrift*, and *Schmidt's Jahrb.*

Medical Gazette, Nov. 11, 1842, *p.* 239.

77.—*Use of Nitrate of Silver to Prevent Bed-Sores.* By Henry Jackson, Esq., Sheffield. [In a paper read before the Sheffield Medical Society, Mr. Jackson made some very useful remarks on the prevention of those sores which result from long continued pressure on certain parts.]

One case occurred from long confinement to bed, in which all the known remedies had been tried without avail—the lotio de Haën (white of egg, and spirit of wine or brandy,) plasters of different kinds, removal of pressure by means of pillows—all of which only answered for a time. In the course of conversation with Dr. Thompson, the nitrate of silver was suggested, and was found to answer perfectly.

Another case occurred in a stout woman, who was seized with paralysis. This was made more formidable by the constant dribbling of urine, and when attention was called to it, a very large slough was found to exist over the sacrum, with very extensive inflammation surrounding. The nitrate of silver was applied, and the inflammation was almost immediately subdued, and the ulcer very speedily healed. The excoriation of the thighs, from the dribbling of urine, was also remedied. This occurred six years ago, and the patient, who is still living, has never experienced any of the annoyance resulting from either this or the almost constant pressure, by making occasional use of the remedy.

He mentioned several other cases, one of phthisis, in which the same beneficial results had been experienced.

The form which he uses is in the proportion of ten grains of the nitrate of silver to one ounce of water, applied by means of a camel-hair brush over every part exhibiting the slightest appearance of inflammation, two or three times a-day, until the skin has become blackened; afterwards only occasionally.

He then mentioned its great utility in the treatment of burns and scalds, in which he had found great benefit resulting from its application, and instanced several cases of superficial burns in children in which he found that in a very short time after its application the pain ceased, and vesication was totally prevented.

In the deeper burns he uses it, not that he finds that it can produce any effect upon the charred parts, but that as Mr. Higginbottom has said, he finds the superficial burn healed, and the extent consequently circumscribed.

Provincial Medical Journal, Dec. 31, 1842, *p.* 277.

78.—*On Outward Applications to Ulcers.* By W. H. O. Sankey, Esq., Margate. On examining the composition of the more common medicinal applications to indolent ulcers, it would appear that, 1st, their energy on the animal tissue, and their caustic properties, are in direct ratio to the rapidity with which they part with their oxygen; and 2nd, the bases of those compounds which experience has taught us to prefer, are, when deprived of their oxygen, perfectly inert, and that their affinity for oxygen is comparatively slight.

Three qualifications, therefore, appear necessary to constitute a good outward application to an indolent ulcer. 1st. A substance containing a large proportion of oxygen, or of an electro-negative body. 2nd. A compound that will part with its oxygen to the animal organism moderately slowly. 3rd. A compound whose elements, when its oxygen is abstracted, possess no chemical or solvent powers on the tissues, nor poisonous effects on the body generally.

Guided by these views, Mr. Sankey is led to recommend the employment of various compounds to indolent ulcers, such as, the iodate of the protoxide of mercury, in the strength of ℈ss. to ʒss. to the ounce of lard; the iodide of starch; the oxide of silver; pectic acid applied as a poultice; the iodate of peroxide of mercury; the preparations of periodic acid, the bromates; succonates; the precipitate formed by tr. opii on Goulard water; mucic acid; alloxan; hydrated peroxide of iron, &c.

In angry and inflammatory ulcers, on the other hand, which are attended with increase of circulation, and, consequently, with excessive supply of oxygen, the oxygenated compounds would be prejudicial. Cold lotions or poultices, for chemical reasons, would be indicated; or, if ointments are used, those only containing a preponderance of electro-positive elements, as ung. cetacei, creasote, &c.; perhaps, also, the application of turpentine, or the non-oxygenated essential oils, as the ol. limon.

Medico-Chirurgical Review, April, 1843, *p.* 564.

79.—*Erectile Tumour Cured by Vaccination.* A child, thirteen months old (not vaccinated), had a small erectile tumour over the left eyebrow. M. Pigeaux inserted nine points of vaccine matter over its whole surface. The vaccine eruption was confluent to the tumor, but followed its usual course; on the 25th day the scabs fell

off, and nine-tenths of the tumor had disappeared. The surface of the tumor was now powdered with alum, and the scab was removed every four or five days, to permit a fresh application of the powder. At the end of three weeks the whole of the erectile tissue was destroyed; the bottom of the wound threw up healthy granulations, and in seven weeks it was completely healed. For the success of an operation of this kind it is necessary that the points of insertion be sufficiently numerous to produce a confluent pock; and should any portion of erectile tissue remain, after the removal of the scabs, it must be destroyed by some caustic like the powdered alum.

Provincial Medical Journal, April 22, 1843, *p.* 79.

80.—*New Caustic.* M. Payan, senior surgeon to the Hôtel-Dieu of Aix, speaks favourably of a new caustic paste made with the sulphate of copper. A sufficient quantity of the sulphate, reduced to powder, is mixed up with the yolk of an egg, so as to form a soft paste of a deep green color. It is applied on a piece of lint, and when removed does not leave behind it the loss of substance, or unsightly scars, which commonly follow the use of other escharotics. In illustration of the efficacy of this remedy, M. Payan relates the case of a soldier, affected with malignant pustule of the cheek. A circular piece of diachylon was placed on the cheek, and a hole, about the size of a two-shilling piece, cut in its centre; through this the caustic was applied on a bit of lint. For five or six hours the patient experienced some degree of pain, but this was not very severe, and subsided; the caustic was removed at the expiration of ten hours, when the surface of the pustule presented a blackish grey color; the adjacent parts were somewhat swollen and red. The local inflammation being thus modified, the eschar was allowed to come away of itself, and at the end of three weeks the wound was completely cicatrised, with scarcely any mark, save a very slight depression in the centre. M. Payan concludes that this caustic might be advantageously employed in certain cases of lupus; but it does not appear that he speaks from actual experience of its efficacy in this disease.—*Bul. de Therap.*, December 1842.

Ibid, April 22, 1843, *p.* 79.

81.—*Artificial Formation of a New Urethra.*—M. Ricord presented lately to the Academy of Medicine a patient on whom he had performed the above operation, in consequence of the urethral canal having been completely destroyed by a phagedenic chancre, throughout the whole extent of its spongy region. The greater part of the skin of the penis had also been destroyed, and two-thirds of the circumference of the corpora cavernosa, as well as the longitudinal groove marking the course of the urethra, were covered with a thin tissue of cicatrix. The urine escaped below from an opening situated in a deep fold of the skin of the scrotum. To remedy this condition, M. Ricord suggested the formation of a new canal between the corpora cavernosa and the cicatrized tissue surrounding them. For this purpose, he employed a trocar-shaped instrument, somewhat

flattened, and terminating in a lancet point. The instrument was first introduced by the meatus urinarius, and towards the middle of the glandular region its point penetrated into the cellular tissue surrounding the corpora cavernosa. In this progress, M. Ricord divided the external fold, until meeting with the gorget previously introduced into the opening through which the urine escaped. The artificial canal thus commencing at the centre of the glandular region was made to rejoin the portion of the urethra corresponding to the scrotum, at the distance of one *centimeter* and a half beyond its external opening. After this operation, which gave no great pain to the patient, a silver canula was introduced in the place of the perforating instrument, and two hours afterwards the urine escaped freely by this new passage. Compresses dipped in cold water were the only dressings applied to the wound. Very little swelling or inflammatory action occurred. The canula was replaced on the fifth day by a gum-elastic catheter, and since the 27th January, the day of the operation, the size of the catheters has been gradually increased so as to give this new canal a suitable diameter.

Medical Times, March 25, 1843, *p.* 420.

82.—*An elegant Sticking Plaster.*—Black Silk is strained and brushed over ten or twelve times, with the following preparation. Dissolve ℥ss. of Benzoin in f℥vi of rectified spirit; in a separate vessel dissolve ℥j. of Isinglass in water; strain each solution, mix them, and let the mixture rest, so that the grosser parts may subside; when the clear liquor is cold, it will form a jelly, which must be warmed before it is applied to the silk. When the plaster is quite dry, in order to prevent its cracking, it is finished off with a solution of terebinth. chia. ℥iv. in tinct. benzoes f℥vj.

Ibid, April 15, 1843, *p.* 44.

83.—*India Rubber Court Plaster.* By B. C. Rowland, Esq., Liverpool. The Pharmaceutical Journal, No. IV., 1st Vol. contains an article detailing the manner of making Mr. Liston's isinglass plaster spread either upon silk or membrane. I am induced to lay before the public, in furtherance of the same subject, the best method of making India-rubber Court-plaster, *which does not wash off;* thinking, as it has become an article now in general use, that the mode of its preparation may interest the practitioner.

A stout frame of wood must be made about three yards long (or any length that would be most convenient), and about one yard and a quarter wide. Within this frame must be placed two sides of another frame running longitudinally and across, so fixed in the outer frame that the two pieces may slide, independently of each other, backward and forward about six inches.

Tapes of canvass must be tacked round the inside of the inner frame and the corresponding sides of the outer frame, so as to form a square for the material to be sewed in; which when done, the two loose frames must be drawn tightly to the outer, by means of a

twine passed round each, in order to stretch, perfectly free from irregularities, the silk or satin previous to laying on the composition.

To make the India-rubber plaster:—Dissolve India-rubber in naphtha, or naphtha and turpentine, and lay it on with a brush, on the opposite side to that which is intended for the plaster, and when perfeetly dry, and the smell in a great measure dissipated, it will be ready for the adhesive material; to make which—take equal parts of Salisbury glue, or fine Russian glue, and the best isinglass, dissolved in a sufficient quantity of water over a water-bath, and laid on with " a flat hog-tool" while warm. It is requisite to use great caution in spreading the plaster evenly, and in one direetion, and a sufficient number of coatings must be given to form a smooth surfaee, through which the texture of the fabric is not pereeptible. Each coating should be perfeetly dry before the succeeding one is given, and placed in a situation free from dust, and where a draught of air would facilitate the drying. The quantity of water used, and the weight of the two materials, must be a little varied according to the season, and the gelatine strength they possess.

Lastly, the plaster being ready to receive the polishing coat, which gives also the balsamie effect to it—a preparation is made in nearly the same manner as the tinctura benzoini composita of the Pharmacopœia, with the addition of more gums; this preparation must be laid on at once only, and with a brush kept for the purpose. For making plasters on eoloured silk, it is only necessary to seleet the silk a shade deeper than the colour required, as the plaster causes it to appear a little lighter.

The process being finished, the plaster must be cut out of the frame with seissors, as near to the eanvass to which it is sewed as it will admit. For sale, it is cut up in squares, which is best done by means of a compass and rule.

I have tried various solvents for India-rubber, and find none answer so well as those above mentioned. Ether dissolves it with faeility, and possesses the advantage of cleanliness, but it is mueh more expensive, and evaporates so rapidly, that it is almost impossible to spread the solution smoothly on the silk; naphtha evaporates more slowly, and is, therefore, preferable, but the quality requires attention, as it may be obtained almost free from that creasote smell which is the only objection to its use. The addition of a small quantity of spirits of turpentine faeilitates the solution of some specimens of India-rubber. The white India-rubber is better than that which has assumed a black eolour by exposure to the air.

I have tried various adhesive materials, but find the one I have mentioned to be the best. The grand arcanum in making eourt-plaster is *glue* and *isinglass*. The polishing coat is not absolutely neeessary, but it improves the appearanee of the plaster, and the gums may probably inerease its healing property, and by giving it a more even surfaee cause it to adhere more closely. It has oeeurred to me, that a similar plaster might be made for common use with ealieo instead of silk, whieh might, in some eases, supersede the use of strapping; and also that the adhesive material might be

made the vehicle for cantharidine or other stimulants. The isinglass plaster is apt to crack in warm dry weather, but this does not occur if it is kept in a cellar in an earthenware jar.

Pharmaceutial Journal, Jan. 1843, *p.* 464.

84.—*Opiates in Hernia.* By James Ross, M.D. [We have several times alluded to the efficacy of opium and morphia in the reduction of strangulated hernia. The following case exemplifies the practice.]

A gentleman, aged 60 years, of a healthy constitution, has been afflicted with a hernia on the right side upwards of fifteen years. By wearing a good truss constantly, he has hitherto prevented the descent of the intestine into the scrotum, except once, about half a year ago. He is naturally of a costive habit, and subject to flatulent colic when this distemper attacks him. It occasions a considerable distemper of the abdomen, and obliges him to lay aside the elastic bandage. A tumour is immediately formed, about the size of a small hen's egg, by the protrusion of the intestine, and part of the omentum, through the ring of the abdominal muscles. A most acute pungent pain is felt in the tumour, which pain extends itself over the whole abdomen; the legs and feet become very cold; the pulse, naturally slow, rises to about 90 in the minute. He feels, however, no thirst, nor any sickness at stomach. Warm flannel applied to the feet and legs give some relief.

Formerly I was very anxious to procure him some alvine evacuation, either by means of clysters, or purgatives thrown into the stomach, being afraid to give opium freely until he had had a stool. By this mode of treatment, he was kept in great torment during 12 or 14 hours. Once or twice the costiveness resisted all medicines, and the distemper ceased without any alvine discharge,—a circumstance which I carefully noticed, and which led me to adopt a different plan. At the next attack of his disease, without regard to the costiveness, I gave him the following draught:—℞. Tinct. Opii gtt. lx. in Aq. Cinnam. ℥. i. This medicine was thrice repeated, with the interval of an hour betwixt each dose; after the third he fell asleep, the hard tumour disappeared, and he awoke next morning in perfect health. He has been relieved in this manner above thirty times, and suffers now very little from his distemper, which was formerly very dreadful to him.

I generally gave an aloetic pill, or some laxative medicine, along with the first dose of the laudanum, to prevent the costiveness which it always occasions. This case naturally suggests the very free use of opium, not only in flatulent colic, which is already well established, but even in the strangulated hernia, provided it do not occasion sickness at stomach, which my patient never had from the use of it. If he, a little thin man, far advanced in life could bear 180 drops of laudanum, pray what is the proper dose for the robust and athletic? Do we not often trifle in the exhibition of this most excellent medicine.

Lond. and Edin. Monthly Journal of Medical Science, Jan. 1843, *p.* 71.

85.—*Concrete Naphthaline in Psoriasis.* By Dr. Emery. Dr. Emery of the Hôpital St. Louis had his attention turned to the investigation of the different produets of tar as remedial agents in the treatment of skin diseases, on aeeount of the sueeessful results he obtained from the use of tar, and because of the unpleasant odour it gave forth. Various preparations were had recourse to, the most valuable of whieh proved to be the eonerete naphthaline, whieh Dr. Emery tried in fourteen eases. In two cases, one of psoriasis gyrata, and the other lepra vulgaris, it failed in effeeting any good; in the remaining twelve it proved more servieeable. Eight of these were men, and four women. In two of the eases, lepra vulgaris of from fifteen months to two years' duration, arsenieal and iodie preparations had been previously tried; in the younger patient the arsenie at first seemed to do good, but the improvement soon ceased. An ointment prepared with two scruples of eonerete naphthaline to thirty of lard was applied, causing the seales to fall off, leaving the skin of a violet colour, with white eireles around. A perfeet cure was effeeted in six weeks, and although three months have passed since, there has not been any relapse. In four other eases the men were labouring under inveterate psoriasis; in one of them it had existed sixteen years, and had resisted arsenical, iodic, and mercurial treatment. The tar ointment was had reeourse to, and with deeided advantage, but the man beeoming impatient on aeeount of his business, an ointment of naphthaline, twiee the strength of that used in the preeeding cases, was spread on eompresses, and applied over the diseased parts night and morning. The man was eured in six weeks. When the ointment was applied too strong, it caused a burning heat, which was soon removed by emollient baths and poultices. The other six cases were also instances of psoriasis cured by the naphthaline ointment. Dr. Emery states that this remedy has an unpleasant odour, which passes off, and it is apt to irritate the skin and eause erysipelas, if it be not carefully watehed.

Ibid, Jan. 1843, *p.* 68.

86.—*Foreign Body Removed from the Bronchus by Tracheotomy.* A man, 24 years of age, having eaten some cherries, one of the cherry-stones found its way into the traehea. Next day, when seen by his medical adviser, the patient, though he had but little pain or eough, experienced, with much difficulty of breathing, a pereeptible sensation of something rising in the chest at each access of eough or full expiration. The surgeon decided on performing tracheotomy, and trusting afterwards to the efforts of the cough to get rid of the stone. An ineision was made dividing three of the traeheal rings. The practitioner introduced his finger into the traehea, which eaused a fit of coughing, and the patient felt the stone move and rise in the ehest. The introduction of the finger was twice repeated; and on the third occasion it was not withdrawn until it had provoked a cough of much violence, which, on the hasty withdrawal of the finger, expelled the stone through the opening. The wound healed in a fortnight.

Lancet, Feb. 25, *p.* 808.

87.—*Effusion within the Joints, Treated with Nitrate of Silver.* Dr. Moritz, of Coblentz, applies the argentum nitratum over the joints affected, in two different modes, either drawing the substance across the moistened surface, at intervals of about a quarter of an inch apart, or laying on, with a pencil-brush, a solution of the strength of one part of the nitrate to eight or ten of distilled water. In either case the epidermis of the skin so touched rises in blisters, containing a lymphatic fluid; this is soon dissipated, and after the scaling off of the dried crust the joint is seen to be obviously diminished in size. This treatment is repeated till the joint is reduced to its natural proportion, or as long as may be deemed proper. M. Moritz affirms that the operation is effected with little pain or irritation of the part affected, and that in more than twenty cases he has obtained in a very short time the most complete cure of effusions of the most obstinate nature, and which had resisted all previous methods of treatment. He says, moreover, that the employment of the nitrate is applicable whatever may have originated the effusion, whether rheumatism, scrofula, gout, wounds of the joints, or any other probable cause.—*Medic. Zeitung.*

Lancet, Dec. 3, 1842, *p.* 341.

88.—*Treatment of Small Nævi in Children, with Acetum Plumbi.* By Dr. Sigmund. The author informs us that after the employment of a variety of remedies he finds the acetum lithargyri the most powerful in causing to shrink and disappear those vascular growths in children, when the growth does not exceed the size of a hazel nut. This disease attacks the face chiefly; the upper lip more particularly: an operation for its removal is apt to cause great disfigurement; and the method of acupuncture recommended by Lallemand, and compression, seldom prove successful. For small, nonpulsating tumours of this description, the acetum lithargyri, used as a cold fomentation, or applied in small compresses, renewed twice a day, will be found highly useful. It causes a separation of the epidermis, which cracks and falls off; and the newly exposed surface is to be treated as the layer just removed. In four weeks, by this method, the author has succeeded in removing small nævi.

British and Foreign Medical Review, Jan. 1843, *p.* 239.

89.—*Popliteal Aneurism Cured by Compression.* [Three cases of this description have lately been treated successfully by compression, one by Dr. Hutton, one by Dr. Cusack, and another by Dr. Bellingham;—so that "it would appear that this plan of treatment has been too hastily abandoned by the profession, probably from the compression employed being so excessive as to render it quite insupportable to the patient. The least possible pressure which may be sufficient to close the vessel should be used, and when this cannot be sustained, it will prove of use to partially compress the artery, so as to lessen the impulse of the circulation." The case of Dr. Hutton's is as follows:]

Michael Duncan, æt. 30, a labourer of rather healthy appearance,

but of intemperate habits, was admitted into the Richmond Hospital on the 3rd of October, 1842. He stated, that ten days previously, whilst suffering from cramp in the right leg, to which he had been subject for the last year, he, for the first time, discovered a tumour in his right ham, which was then equal in size to a hen's egg; in three days afterwards he observed some swelling in the foot and ancle, and felt pain along the outside of the leg. At the time of his admission into hospital the tumour had somewhat increased in size, and was found to occupy the lower part of the popliteal space. It pulsated strongly, and when the femoral artery was compressed in the groin the tumour admitted of considerable collapse. The compression being removed, it again became distended, and the "purring thrill" attended the re-entrance of the blood into the aneurismal sac. The leg was somewhat swollen and its veins turgid, and he complained of prickling sensations in the limb. His pulse was 60 and regular, and his general health appeared to be unaffected. The nature of his case was explained to him and the operation of tying the femoral artery proposed. To this he declined to submit in the first instance, and expressed a desire that other means might be tried. For three or four weeks he maintained the horizontal posture, and a compress and bandage were applied; but as the tumour gradually increased in size, and as he suffered pain from the pressure, this treatment was discontinued.

November 1st. The patient being still reluctant to undergo the operation, I resolved to try compression of the femoral artery, and I entertained some hope of success from being informed by Mr. Adams that the late Mr. Todd had succeeded in a similar case, of which no account has been published. Having at hand an instrument constructed for the suppression of secondary hæmorrhage after ligature of the femoral artery, I applied it in this case. It was so contrived as to admit of pressure being made by a screw and pad upon the course of the femoral artery, and the counter-pressure upon the opposite surface of the limb without interfering with the collateral circulation.

In the first instance the compression was made upon the femoral artery in the middle third of the thigh, and although it was effectual in compressing this vessel it produced so much uneasiness that it could not be sustained, and after a few applications the apparatus was removed and adapted to the upper part of the limb.

November 12th. The femoral artery was compressed as it passes from the pelvis under Poupart's ligament, and the pressure maintained for more than four hours.

14th. The tumour feels rather more solid; the purring thrill before felt on the re-entrance of the blood into the sac is no longer sensible; the pulsation as before.

[The compression was employed according to the feelings of the patient and then relaxed. On the 22nd it was continued three hours—on the 24th six hours—on the 26th four hours; and so on till December 1st, when]

An artery, about the size of the temporal, was felt pulsating along

the surface of the tumour, which was quite solid, much diminished in size, and altogether free from pulsation. The use of the instrument was now discontinued. The femoral artery pulsates naturally.

On the 27th of December the tumour was reduced to the size of a small walnut, and felt very hard. He was this day discharged, at his own request.

In six weeks he visited the Hospital, at my request. The tumour was about the size of a nutmeg, and solid. He had been at his usual employment.

[In Dr. Cusack's case there was "a tumour in the lower angle of the left ham in the course of the popliteal artery, about the size of a hen's egg; it was elastic and pulsated synchronously with, but more powerfully than the heart; the pulsations were as evident latterly as on the superficial surface; moderate pressure on the femoral artery stops them, and empties the tumour, so that it can scarcely be felt; the skin is not discoloured, nor is the tumour tender on pressure, except at a point on each side, the size of the top of the finger; it is smooth and even on the surface, and a distinct bruit can be heard when the ear is applied to it; the anterior and posterior tibial arteries cannot be felt in either feet; what vessels can be felt, appear to be large and to have thin coats; no morbid sound can be detected in the heart, but its impulse is weak, and the pulsations very intermittent and irregular."]

Feb. 22nd. Mr. Hutton came to-day, and applied his instrument; the pad being screwed down on the femoral artery at as high a point as possible, and with force sufficient to stop completely the pulsations in the tumour; a compress was then laid over the aneurism, and secured by a flannel bandage, beginning at the toes; he soon began to feel uneasy, but when it had been on for one hour and a half, his face became pale, his pulse weak and slow, and he complained of faintness, with a feeling of weight in the situation of the pad, running up to his heart, and the sensation of a rush of blood to the head, accompanied by profuse perspiration on the forehead and vertex; the instrument was now loosened, and he soon rallied; when quite recovered, the pad was again screwed down, but he could not bear it for more than half an hour at a time.

Cont. tinct. digitalis gtts. x. t. d.

24th. He bears the instrument as long as he can, and then loosens it, screwing it down as soon as he is free from pain; he complains most of the rush to his head; the pad slips off the artery very easily; he says he can tell by a peculiar sensation of something running up from the situation of the pad, when the pulsations in the tumour are stopped, but he often gives an erroneous opinion; to-day the instrument was put on loosely, so as only to lessen the force of the pulsations.

Cont. tinct. digitalis gtts. x. t. d.

27th. He has been very patient and quiet, but no effect has been produced on the aneurism. Mr. Hutton's instrument was left

off, and a bandage applied. Temperature of both legs the same throughout.

Cont. tinct. digitalis gtts. x. t. d.

March 4th. Same as at last report.

Tinct. digitalis gtts. xv. ter die.

16th. Sir P. Crampton's instrument, modified by Mr. Daly, was put on, so as merely to lessen the impulse in the aneurism; no compress or bandage was put on the tumour. Pulse 63, very intermittent; it soon rose to 90.

Cont. tinct. digitalis, gtts. xv. ter die.

18th. He bears this instrument much better than the other; has none of that unpleasant rush to the head; complains chiefly of soreness produced by the pressure of the pad; this is relieved by dusting the part with flour. No change in the tumour.

Omitte tinct. digitalis.

22nd. The tumour is decidedly harder and smaller, the impulse being greatly lessened; at times there is only a thrill in the aneurism; sometimes there is no motion whatever in the tumour, even when the pressure is removed, but it returns on the slightest movement of the body; he observes that the two spots before mentioned have lost all tenderness on pressure, Complains of cough. Pulse 67, very irregular.

Mist. expect. c. tinct. opii camph.

23rd. Pulsation has totally ceased; the tumour is very hard, and about the size of a large walnut; a large artery can be felt running down superficial to the aneurism, over which it can be easily rolled with the finger; it then divides into two branches; the articular vessels do not appear to be enlarged.

On the 19th he had some œdema of the leg, for which a bandage was put on the limb; for the last two nights he has had a most intolerable itching in the thigh, but there is no redness or mark of any kind.

25th. Instrument was removed to-day. The femoral artery can be distinctly traced as far as the opening in the tendons of the triceps and vastus int.

Mist. expect. c. Aq. lauro cerasi.

April 1st. The tumour is decreasing; the enlarged artery above-mentioned is much smaller than at last report; the relative temperature of the limbs, as ascertained by thermometer, has not varied.

7th. Tumour continues to decrease; the entire artery can be traced until it enters the aneurism, but in the lower third of the thigh and in the ham, the pulsation is so weak that it can only be felt on a careful examination.

Cont. mist. expect.

14th. Tumour can now be grasped with facility; the enlarged artery has become very small, while the popliteal of the affected limb now pulsates as strongly as that of the sound one; a number of hard cords can be felt passing over the tumour. The palpitations of the heart still continue. Pulse 68, intermittent.

Dublin Journal of Medical Science, May 1843, *p.* 364.

MIDWIFERY.

90.—RUPTURE OF THE WOMB SUCCESSFULLY TREATED.

By Dr. Mitchell, Master of the South Eastern Lying-in-Hospital, and Lecturer on Midwifery in the Dublin School of Medicine, &c.

[Although rupture of the womb is one of the most fatal accidents that can take place, there are several instances on record where recovery took place, and even where impregnation and parturition at the full period have been accomplished. The following is a very interesting case and shews the efficacy of treatment in assisting nature in her remedial powers. The woman was 38 years of age, and the mother of six children.]

On examination per vaginam, the os uteri was found dilated as large as a penny piece; head presenting; the pains recurring about every ten minutes. She was left in charge of the pupil on duty.

The labour pains continued brisk and frequent up to 3 o'clock, A.M. of the 19th, when I was called up to her, as she was very restless and uneasy. I now found the os uteri as much dilated as the circumference of a teacup, the face towards the pubis; the pains effectual and frequent. I again left her, and did not see her again until 7 o'clock, A.M., when I was summoned to her in consequence of the pupil being alarmed at the great prostration of strength which had ensued. There was now considerable irritability of stomach, and vomiting of bile mixed with mucus; pulse scarcely perceptible at the wrist; coldness of extremities, and most peculiarly glassy and sunken appearance of the eyes. I ordered her immediately a tumbler of hot, strong punch, to be given in divided doses, and, in consultation with Dr. Beatty, at once determined on extracting the child. On attempting to extract with the forceps the head receded, so that it was thought advisable to use the perforator, which was done in the manner recommended by Dr. M'Keever. The head was afterwards extracted without much difficulty with the crotchet, the uterus acting in the expulsion of the shoulders and body. The placenta was extracted immediately, and a rent perceived at the junction of the anterior part of the cervix with the os uteri. The uterus contracted firmly, and no intestine whatever escaped through the fissure.

[Dr. M'Keever's method of using the perforator is "to apply it not at the most dependent part of the presentation, but to one side,

so as to press the part as it were against the pelvis of the mother, and thus prevent the recession of the child through the rent." Immediately after the operation, a grain of solid opium was given, and repeated every hour: this was followed in about five or six hours with an opium injection containing fifty drops of laudanum. In seven hours the temperature had increased, and the pulse rose to 96. Throughout the case opium seems to have been chiefly depended upon; no depletion whatever was resorted to, and even during the large doses of opium which were given throughout, a diarrhœa existed.]

It may be said, that from the commencement opium was the sole remedy relied on; it was administered at the suggestion of my friend Dr. Beatty, who had previously witnessed the good effects of this remedy in a case of rupture of the uterus, occurring likewise in the anterior wall of the cervix uteri. In this case, Dr. Beatty was called to see the patient after the accident had occurred, it having been produced by the awkward and ineffectual attempt to turn. He states, that he found the woman in an extreme state of collapse, with an almost imperceptible pulse, the surface cold, and covered with a clammy moisture. Some restoratives were given, and the child was turned and extracted. He was induced to try large doses of opium, from having witnessed its good effects in cases of sudden bursts into the cavity of the peritoneum, a plan of treatment first brought before the profession by Drs. Graves and Stokes, in their Clinical Report of the Meath Hospital, published in the fifth volume of the Dublin Hospital Reports.

It is, I think, an interesting question to decide, in what way opium acts in these cases of rupture of the uterus? It is well known that this drug exerts a powerful action in allaying or diminishing muscular contraction, and is thus supposed to be of use in cases of rupture of the intestine; at least this is the view taken of it by Dr. Hart, who at p. 306 of the fifth volume of the Dublin Hospital Reports, after speaking of the impropriety of giving purgatives, as by their action they would tend to increase the peristaltic motion of the intestines, and thus produce a greater effusion of the intestinal contents, says, "instead of purgatives, then, it would appear more proper to give large doses of opium, with a view of suspending the peristaltic motion; could this be accomplished, and the inflammation moderated, by bleeding general and local, and counter-irritants, sufficient time might be gained for the formation of adhesions around the wound in the intestine, &c."

In the case just related, it is a fact worthy of remark, that although the uterus contracted firmly immediately after the extraction of the child, yet that as soon as the opium had been taken in sufficiently numerous doses, it became relaxed, so much so, indeed, as to appear as large as when impregnated, and this dilated condition it did not lose till the tenth day, evidently, in my mind, proving that the opium acts in a similar manner in both accidents. Another remarkable similarity produced by this medicine in the

two accidents, rupture of the uterus and rupture of the intestine is, that in both it appears to lose its narcotic and astringent properties, as evidently proved by the case of a man admitted into the Meath Hospital (and alluded to in the above named Report by Drs. Graves and Stokes), labouring under symptoms of peritonitis, from ulcerative perforation of the intestine, to whom 105 grains of opium, exclusive of that in the injections, were administered, without the patient experiencing the slightest coma, headach, or delirium; a diarrhœa likewise setting in severely for three or four days, agreeing most particularly with the effects produced in the case just related.

Dublin Journal of Medical Science, Jan. 1843, *p.* 339.

91.—EXTRAORDINARY CASE OF TWINS.

By William Jameson, M.D., Consulting Surgeon to the Coombe Lying-In Hospital, &c.

On the evening of the 3d April last, I was called to Fitzwilliam Place, to see Mrs. R., a lady about thirty years of age, the mother of four living children, in consequence of severe pain experienced through the abdomen, which recurred at uncertain intervals, lasting generally about five minutes at a time. These pains commenced in the morning after breakfast, but in consequence of their becoming more severe, and dreading inflammation, she sent for me. When I arrived she was in bed, her pulse a little accelerated, tongue clean, no tenderness discoverable on pressure in any part of the abdomen; which felt full, but being seized during the examination with a pain, I then distinctly discovered a firm, hard tumour, that reached as high as the umbilicus, but became softer on the subsidence of the pain, and which appeared to me to be a gravid uterus. On applying the stethoscope over the tumour, after some difficulty I thought I heard a placental murmur in the right iliac fossa, but no fœtal heart anywhere, and suggested the possibility of her being with child, and then in labour. This, however, she considered to be impossible, as she had been confined so recently (seven weeks) of a child she was then nursing. A vaginal examination was refused; I found, however, on inquiry, that she had had a slight red discharge from the vagina during the latter part of the day, which she considered menstrual. As I was convinced that the tumour was the uterus, and that it was acting to get rid of something or other, I ordered an oil draught, and quitted the apartment in order to explain to her husband my views of the case, viz., that there was some foreign body in the womb, which in all probability would soon be expelled. While we were thus conversing on the subject, I was hurriedly summoned to my patient, who told me that there was something coming from her. On making the examination during the pain, I found the head of a small child presenting with the membranes complete, and on the recurrence of another pain, the child, mem-

branes, and placenta, were expelled altogether. I immediately opened the bag, containing very little liquor amnii, and found in it a dead male child, at about the sixth month of gestation, shrivelled and dark, but not at all putrid or decomposed, between eight and nine inches long. The cord was small, easily giving way under the fingers; but the placenta appeared to be fully as large as one belonging to a full-grown fœtus, and healthy. Indeed, I have often met a smaller one at the full period. The uterus now contracted well. I placed a binder round the abdomen, administered an opiate, and never saw a more astonished female.

The account I received was as follows. It appeared that she had had four previous confinements without any untoward circumstances, each labour being generally completed in a few hours; that the youngest of them was a boy then only seven weeks old, having been born on the 13th February last, which she was nursing; that she had been attended by a midwife at her residence in the county of Wicklow (her usual medical attendant being out of the way when sent for); that on that occasion her labour went on much the same as usual, having been completed in four hours; that the after-birth was thrown off about ten minutes after the birth of the child, without any subsequent hæmorrhage; and that she recovered and was able to go about her domestic arrangements as soon as on former occasions; but she remarked that her size had not much decreased, which she imputed to bad swathing of the abdomen; that her general health was good; had as much milk as usual, and the only thing that annoyed her was her size, which she considered a natural consequence of her situation, as she always got fat while nursing; that the last time she menstruated, was in the latter end of the month of April 1841, and as she had been confined on the 13th February last, forty-two weeks must consequently have elapsed between the last period of menstruation and the birth of the child.

The above case I consider as one of great interest, whether viewed, in the first place, as regards the size of the child, it being as large as a child at the sixth month; the circumstance of its having been carried forty-nine weeks (within three weeks of twelve months) after the last act of menstruation, and remaining for such a length of time after its growth was arrested in utero without becoming decomposed; the labour pains ceasing after the birth of the first, and no inconvenience arising from, or suspicion of any thing remaining in the uterus after that accouchement. All these points, I say, are of great interest. Secondly, to view it as a case of superfœtation, or as one of common twins, in which the first was expelled under ordinary circumstances at the full period; then all labour-pains having ceased, and an ignorant woman being in attendance, who did not know whether a second child remained behind or not, from the feel of the abdomen, while a second did not only exist, but was carried for seven weeks afterwards without any suspicion of its existence. I am fully aware that many practitioners have met cases (and a similar one occurred to myself) of abortion having taken place in twins, where one ovum was expelled,

and that notwithstanding, the female has gone on progressively increasing in size, and in a few months, as the case might be, brought forth a living child at the full period. There are other instances again of twin cases, in which one child has gone on to the full period, and been born healthy, and full grown, while its companion in utero has been blighted at a very early period (a beautiful preparation illustrative of which we have preserved in the Coombe Hospital Museum,) and been expelled at the same labour, giving rise to the idea of superfœtation, or of a woman having conceived again while she was pregnant, from the circumstance of the child not being putrid, some erroneously imagining that a dead child cannot be carried for any great length of time without being found in that state. But I am not aware of any instance in which a woman was pregnant of twins (evidently the case here), where, at the full period, labour set in, and went on healthily, expelling one child alive, while another, dead, was retained, and held in the womb for seven weeks afterwards. The retention of the placenta is also a matter deserving of attention; why was there not hemorrhage after the birth of the living child, inasmuch as the presence of the unexpelled contents prevented uterine contraction to have gone on sufficiently for that purpose. The only answer I should give to this is, that the ovum remaining in the womb, and of a sufficient size, must have pressed against the surface to which the other placenta was attached, and in that way have saved the patient.

Lond. and Edin. Monthly Journal of Medical Science, Dec. 1842, *p.* 1072.

[The following case also occurs in the Lancet, Jan. 14, 1843, by Mr. Vale, of Birkenhead:]

Martha Lowe, in her fifth pregnancy, was taken in labour at the seventh month of utero-gestation. A midwife was in attendance, when, at the expiration of a few hours, a little girl was born. The after-pains were unusually troublesome and severe for a short time, when Mr. B.'s aid was requested in order to prescribe for the pains. She stated at the time there was positively another child in her womb, and that she should *then* retain Mr. B. to perform, at the end of *two months*, the duties of accoucheur at the birth of the next child. At this rather novel engagement Mr. B. smiled (not dreaming that she was in earnest), and promised to send her an anodyne, which abated all the pains, and in a short time she was well, and busily engaged about her domestic affairs, and so continued until exactly the day two months from the first time that Mr. B. was called in, when, in his presence, another living child full-grown, of the same sex, was speedily ushered into the world. In the interim of the two births, at the month's end, as is usual, the patient was churched, for safely passing through her first accouchement. The eldest child lived but a few months; the last born is still living, and six months ago resided with her mother, a fine young woman, nearly twenty years of age.

Lancet, Jan. 14, 1843, *p.* 577.

92.—TABULAR VIEW OF THE TREATMENT OF UTERINE HÆMORRHAGES.

By William Camps, M.D., Edinburgh. (Being a Translation of the Tableau Synoptique of M. Paul Dubois, Paris.)

Hæmorrhage before Parturition.

A. *Slight Hæmorrhage.*—Horizontal position; perfect repose; cool air; cool acidulous fluids; low diet; bleeding if there be symptoms of plethora. The bladder and rectum to be emptied.

B. *Severe Hæmorrhage.*—The same treatment as in A., except the bleeding (1.) At first cold applications; then the ergot of rye, in doses of 12 grains, repeated three times, at intervals of ten minutes. And if these means are insufficient to arrest the hæmorrhage, plug the vagina, or in some especial cases rupture the membranes (2.)

Hæmorrhage during Parturition.

Slight Hæmorrhage.

Os uteri not dilated, and not dilatable.

Membranes entire:—The same means as in A., except the bleeding, which is not indicated unless the symptoms of plethora are exceedingly pronounced.

Membranes ruptured:—As above.

Os uteri dilated.

Membranes entire:—The same means as in A., then wait; or rupture the membranes (3.)

Membranes ruptured:—The same means as in A., and wait; if the pains are feeble or slow, give the ergot of rye (4.)

Severe Hæmorrhage.

Os uteri not dilated, and not dilatable.

Membranes entire:—The same treatment as in A., except the bleeding; then the refrigerants, as cold applications. In case these fail, and if the pains are feeble, the ergot of rye; then rupture the membranes. Lastly, if the state of the os uteri will not allow of turning, plug the vagina.

Membranes ruptured:—The same treatment as in A.; refrigerants; ergot of rye if the pains be slow or feeble. In case these fail, compression of the uterus; plug the vagina; introduce the hand, and deliver by turning (5.)

Os uteri dilated, or dilatable.

Membranes entire:—Rupture the membranes (6.); and if this does not succeed, introduce the hand and turn or apply the forceps.

Membranes ruptured:—Turning, if the head of the child has not descended into the cavity of the pelvis (7.) Apply the forceps if the head of the child have already descended into the cavity of the pelvis. Simple extraction if the child present by breech, knees, or feet.

(1.) *The ergot of rye* is employed here as hæmostatic; in the case supposed, there is not, at present, uterine pains; it is not pro-

bable that the employment of the ergot of rye should produce them, for hitherto this remedy appears to possess the property of increasing the uterine contractions only when they occur spontaneously, and not that of exciting them, when they do not already exist.

(2.) *The plug* will, in the first place, arrest the hæmorrhage; then, by the retention of the blood, and by its presence, it will irritate the *neck* and *orifice* of the uterus, and it will induce the expulsive contractions. These will dilate the *os uteri*, and this dilatation will allow either the rupture of the membranes, or the termination of the accouchement.

(3.) This rupture can have no inconvenience; it is a means of preventing the increase of the hæmorrhage. We may always dispense with it, and rest satisfied with waiting until the progress of the labour shall have arrested the hæmorrhage: the last method is after all perhaps the most prudent. A little *more* or a little *less* tendency to the increase of the hæmorrhage should determine the choice of the one or of the other method.

1st. *Wait*, if the hæmorrhage do not increase in any degree, and still more so if it diminish.

2d. *Rupture the membranes* if there be any tendency to increase of the hæmorrhage; this rupture will be profitably preceded or followed by the administration of some doses of the ergot of rye, if the uterine pains are feeble or slow.

(4.) It may be asked, if it would not be proper to terminate the accouchement in this case, since the parts concerned seem disposed to this termination. We think that if the fœtus presents in the usual manner, it is better not to be officious with the application of the *forceps* or *turning*, because the employment of these means would be more severe than the *slight* hæmorrhage which appears to demand their use.

(5.) This case is one of great delicacy; the application of the plug here requires great caution; for when the vagina is closed up, the blood may possibly accumulate in the cavity of the uterus, so that the patient may be lost, although no blood make its appearance externally; and the danger will be so much the greater, as the uterus shall have been more developed before the rupture of the membranes, and as the uterine contractions shall be more feeble. The application of the plug should be preferred, to the termination of the accouchement, only when the uterine contractions are sufficiently strong, and when, at the rupture of the membranes, only a very small quantity of the liquor amnii shall escape from the uterus. Again, the application of the plug demands great care of and attention to the patient, and should be followed by the application of a bandage round the abdomen sufficiently tight to resist the enlargement of the uterus. On the contrary, when the uterine contractions are feeble, when a large quantity of the liquor amnii shall have escaped at the moment of the rupture of the membranes, it will be necessary to overcome the resistance offered by the state of the os uteri, and terminate the accouchement by *turning*.

(6.) In this case we may be surprised at the advice to *rupture the membranes*, and *wait*, before adopting any other method, according as the retraction of the uterus may have, or may not have, arrested the hæmorrhage; it seems so important, both to the mother and to the infant, that the birth of the latter should be the result of the uterine contractions alone, rather than of manual interference, very often difficult, that it is very desirable to take the chance of a spontaneous accouchement at all times when there is the probability of obtaining it. It is to be understood that this recommendation to *wait*, is only admissible in case the uterine contractions are neither feeble nor slow.

(7.) We may certainly in this case have recourse to the *forceps;* but the employment of this instrument, when the head of the child is above the orifice, and not engaged in the cavity of the pelvis, frequently offers sufficient difficulty to render the delivery by turning preferable.

It will be seen that the indications are based on the slightness or severity of the hæmorrhage, and not on the circumstance of the insertion or non-insertion of the placenta on the neck of the uterus; not that this circumstance is a matter of indifference, for almost always the hæmorrhage produced by the detachment of the placenta inserted over the orifice of the uterus, is one of a very severe and serious character, and demands immediately the employment of the means indicated for severe hæmorrhages. Sometimes the insertion of the placenta on the neck of the uterus, occasions only a slight hæmorrhage; the author does not consider, then, as do the greater part of accoucheurs, that the insertion of the placenta on the neck of the uterus requires, in every case, the speedy termination of the accouchement, yet it may modify the employment of the means above indicated. For instance, if in a case of severe hæmorrhege the placenta covers entirely the os uteri, we cannot have recourse to the simple rupture of the membranes, as we could if such were not the case. If the os uteri be neither sufficiently *dilated*, or sufficiently *dilatable*, to allow the introduction of the hand, it will be necessary to employ the plug; if, on the contrary, it be sufficiently *dilated*, or sufficiently *dilatable*, it will be necessary to detach one of the sides of the placenta, in order to make a passage into the cavity of the uterus, and deliver by turning; but if a portion only of the placenta be inserted on the os uteri, leaving exposed a part of the membranes, we may procced as if the placenta were not inserted at the os uteri. In no case does it seem advisable to make a passage through the placenta, as some accoucheurs have recommended. Lastly, if the placenta, pushed by the head or the breech of the fœtus, be entirely, or almost entirely, detached, and has passed beyond the orifice of the uterus, we must extract it before the fœtus, for this organ is useless in these circumstances, and its presence in the vagina is an obstacle to the free exercise of the hand, or of instruments.

Medical Gazette, Jan. 13, 1843, *p.* 553.

93.—CASE OF UTERINE HÆMORRHAGE ARRESTED BY PRESSURE ON THE AORTA.

By James D. Brown, Esq., Haverfordwest.

I attended a woman, æt. 34, in her fourth confinement: she was a person of lax fibre. The labour was natural, and terminated in six hours; but a violent fit of shivering seized her before the expulsion of the child. I was prepared for the event; and, as I expected, flooding came on to a fearful extent. The placenta was loose, and came away with the first gush. The uterus again dilated, but I passed my fingers into its cavity, in order to excite it to contract, &c. and at the same time made pressure externally, but hæmorrhage still continued in spite of every effort—pressure, cold applications, &c. &c. She had fainted, and recovered, and was suffering from the effects of the loss of blood.

I decided on trying the effects of pressure on the abdominal aorta. I had no difficulty in finding it. I made firm pressure on it, which gave the patient some pain. The hæmorrhage ceased directly, and did not recur: I had it in command: to feel satisfied of that, I gently relaxed my grasp once or twice, when bleeding again commenced.

I still kept up pressure on the uterus, and administered secale cornutum in brandy and hot water. The woman rallied, the uterus contracted firmly and permanently, and I let loose the vessel, after pressing it for nearly two hours; and all went on as well as possible.

A similar case occurred to me, in about two months after. I adopted the same means, and with the same pleasing and important results.

I found no difficulty in finding the vessel, but I imagine there would be in a stout woman (unless the recti muscles were separated), but even then, relaxing the abdominal muscles would, I think, be sufficient to allow the hand to reach the aorta. I must confess that I thought it a difficult undertaking before I tried.

Some authors recommend it to be pressed from the interior of the uterus, which may be done when it cannot be got at *otherwise;* the one plan is not free from danger, the other is completely exempt.

I am surprised that so important a measure is not more general—a measure the principle of which is acknowledged in the most trifling surgical operations, the effects of which are certain and immediate, and the result the saving of life.

Medical Gazette, Dec. 2, 1842, *p.* 327.

[For a case confirming this mode of practice, see Medical Gazette, December 23, 1842, p. 449, by Mr. Pretty.]

94.—TANNIN IN UTERINE HÆMORRHAGE.

M. Dumars has published a communication in the Journal of the Society of Practical Medicine, at Montpellier, containing the detail of several cases in which he successfully employed tannin internally

in the treatment of uterine hæmorrhage. A woman, twenty-five years old, three months advanced in pregnancy, while travelling in a waggon, was seized with a severe colic, which was followed by a frightful uterine hæmorrhage. A midwife plugged the vagina, and applied cold lotions to the abdomen and thighs, but without advantage; the plug was expelled. When M. Dumars arrived, the patient was in a state of complete syncope, and death approaching. He ordered pills containing two grains of tannin with a small proportion of opium, one to be taken every hour. By the time she had taken the sixth pill, she fell asleep: and when she awoke three hours afterwards, the hæmorrhage had almost stopped, and had entirely ceased by the next day. The pills were continued every three hours.

In this case the tannin was given in the form of pills; but circumstances may arise during syncope in which, from the difficulty of swallowing, it may become impossible to administer it in that form. In such cases, M. Dumars prescribes it in the form of draughts or injections. Miss——, six months pregnant, was seized with violent hæmorrhage, after having experienced a severe mental emotion. When seen, she was in a very alarming condition; the abdomen was hard and tympanitic, the skin cold, face pale, the mouth wide open, pulse feeble and intermittent, and complete insensibility. The os uteri was partially dilated, and abortion was very nearly occurring; in fact, the slightest delay might prove fatal. M. Dumars ordered four scruples of tannin to be infused for ten minutes in a pint of boiling water, and then to be injected slowly into the bowels. The thighs were brought together, and kept so in a state of flexion, by means of a napkin and pillow, and warm cloths were applied all over the body, after which the following medicine was given, in the dose of a spoonful every half hour:—ninety-six scruples of water of black cherries, sixteen scruples of orange flower water, forty-eight scruples of linden water, ten grains of pure tannin, forty-eight scruples of syrup of diacodium. The medicine was administered by means of a funnel. After the lapse of three hours Miss —— opened her eyes, and the pulse increased in power; some spoonsful of soup were then given. On examination, the hæmorrhage was found to have nearly ceased. Twenty-four hours afterwards the patient had recovered her senses; the os uteri had closed, and the bleeding was arrested. The movements of the child were felt soon afterwards. The mother went her full time, and had a happy delivery.

Provincial Medical Journal, Nov. 18, 1842, *p.* 162.

95.—CASE OF INVERSION OF THE WOMB.

D. Humphreys Storer, M.D., reported to the Boston Society for Medical Improvement, April 11, 1842, the following case of inversion of the uterus:—

He was called to a woman in labour. In ten or fifteen minutes

there came two smart pains, and the child was born. In five minutes the placenta was thrown off. The cord was not touched, except to divide and remove the child. On putting his hand under the clothes, to take away, as he supposed, the placenta, he found that he had hold of the uterus with the placenta attached. He removed the placenta, put his fingers to the fundus of the uterus, and passed it up without the slightest difficulty. There was some flowing from the uterus where the placenta was detached, but not great, and none after it had passed up. The woman was very much prostrated, and for an hour appeared as if she was dying. She however revived, and the next morning was comfortable. This case proves that inversion may take place without the interference of the practitioner; for no traction whatever was made upon the cord, which was of the usual length, and not encircling the child.

Drs. Dewees, Burns, and Gooch, in cases of inversion, advise when it can be accomplished, the return of the uterus before the removal of the placenta, on account of the dangerous hæmorrhage which is otherwise liable to ensue. Dr. Bard recommends the previous removal of the placenta.

Dr. Storer followed in this case the practice of Dr. Bard, and the ease with which the uterus was returned, and the happy convalescence thus far, she being as well to-day (the sixteenth day after delivery,) as she had been at the same period during any former pregnancy, proves the course to have been a judicious one. The placenta was very large, and he believed that had he made any attempt to return it, he would have met with difficulty, from its mere bulk. In a case of inverted uterus, related by Dr. Meigs, of Philadelphia, in his Practice of Midwifery, he was unable to return it with the placenta, and at the suggestion of Dr. James, the afterbirth was removed from its attachment. Afterwards, with considerable difficulty, a reduction of the organ was affected.

The little blood which was lost after the placenta was removed, in the case reported by Dr. Storer, showed, he thought, that the great dread of uterine hæmorrhage, which is felt by physicians from the removal of the placenta, even should no uterine contraction immediately occur, is not well founded. As soon as the placenta was detached, the hæmorrhage ceased, and although the uterus was so completely relaxed as to allow the hand to pass with perfect freedom, without the slightest muscular contraction being perceived, there was no bleeding.

Medical Gazette, Dec. 16, 1842, *p.* 428.

96.—ALTERNATE WARMTH AND COLD AS AN EXCITEMENT TO UTERINE ACTION.

By Charles Simpson, Esq., Stamford.

(In a Letter to Dr. Marshall Hall.)

Some little time ago I had under my care a case of puerperal convulsions which terminated well. In the course of it two circum-

stances illustrative of your system occurred. The patient became conscious, but was obstinate. With great difficulty I forced some liquid into the mouth, but she would not swallow; I, therefore, dashed cold water in the face, and the contents of the mouth were instantly gulped down. This novel mode of making patients swallow was repeated, I should say, a dozen times, and with the same invariable effect. During the convulsions the labour stopped. There was, as it were, a metastasis of muscular action, from the apparatus of parturition, distributed over the whole system. Every resource in this state of things which was employed to produce uterine pains did but aggravate the general convulsions without acting on the uterus itself.

After the lapse of many hours, however, the labour was resumed, and now the cold water, applied suddenly to the abdomen, was most effective in producing uterine contractions. After a little while, however, this lost its utility. The abdominal surface becoming *cold* from the repeated application, the water no longer acted as an *excitant*. Accordingly warm flannels were applied to restore the temperature, and then cold water was again applied with decided effect. This alternate application of cold and heat strikes me as being something new; it is of great value in cases of hæmorrhage from the uterus. The vital power of the patient is unable to bear the continued application of the cold, and when that ceases to do good it must, under such circumstances, produce harm. With the alternate application of heat and cold, however, the latter valuable remedy may be used, so long as it is necessary, without fear of its utility being worn out.

Lancet, Dec. 17, 1842, *p.* 437.

97.—*Cæsarean Section successfully performed.* By Dr. Merrem. A woman, 30 years of age, had already been three times delivered by means of the perforator and crotchet. Pregnant for the fourth time, and having suffered extremely from the 12th to the 15th of August, without a prospect of the head passing the pelvis, the patient consented to the Cæsarian operation, which had been proposed to her early in the course of the 14th. The operation was done in the usual way, in the linea alba, and the only difficulty experienced was in disengaging the head from the isthmus of the pelvis, into which it was firmly wedged. The child, when sprinkled with cold water, began immediately to cry, and moved freely; the mother declared the pain of the operation nothing, when compared with the suffering she had already endured; it was begun and completed in a quarter of an hour. 16th. Belly distended with flatus; some pain; no fever. A suppository was followed by the discharge of much flatus, and complete relief to the pain. A little soothing electuary was all the medicine that was prescribed or required. The mother nursed her child, and in four weeks was going about her ordinary household affairs.—*Medicin. Zeitung.*

Lond. & Edin Monthly Journal of Medical Science, Feb. 1843, *p.* 160.

98.—*On the Ammoniacal solution of Ergot of Rye.* By W. R. Gore, Esq,, Medical Attendant to the Limerick Institution for Lying-in-Women, &c. *Mode of Preparation.*—Into half-a-pint of aromatic spirits of ammonia, I put four ounces of fresh ergot of rye, bruised coarsely. I allow this to stand for a month, frequently stirring the ingredient with a glass rod in the fluid; after which I squeeze every drop of the spirit out of the rye. The "ammoniacal solution," thus made, has a fine dark colour, and looks inspissated. In a glass stoppered bottle it may be preserved for any length of time without deterioration of power. This solution contains all the active principles of the rye in a convenient form, and increased efficacy, the ammonia causing the ergot to act more rapidly, and with greater certainty.

I administer 30 drops of it in a wine-glass of cold water, every ten minutes until the action required is sufficiently developed, applying gentle pressure with the flat of the hand, to the abdomen when the pains are present. Three such doses have, in the majority of cases which came under my observation, proved sufficient; but circumstances will now and then alter the requirements, as in other branches of medical practice in respect to various remedies.

Medical Times, Nov. 5, 1842, *p.* 92.

99.—*Remarks on Forceps Cases.* By Dr. Robert Lee, F.R.S., &c. &c.. In more than twenty cases of protracted labour, where it had been proposed to deliver with the forceps, the histories of which it would be tedious to relate, I recommended delay, and they all terminated favourably without artificial assistance.

Five of the mothers whose cases have now been related, died from puerperal convulsions, and four from the rash and inconsiderate use of the forceps. Seven had the perinæum more or less injured, one the recto-vaginal septum torn, five were left with cicatrices of the vagina after sloughing, and one with an incurable vesico-vaginal fistula. In none did any benefit result from the instrument before the greater part of the head of the child had passed through the brim of the pelvis, and the orifice of the uterus was fully dilated. In one case only was the employment of the forceps advantageous, where the blades were applied and locked with great difficulty, and great force required to extract the head of the child. Seventeen of the children were born alive and lived.

In protracted labours, when the head has made no sensible advance for hours, and becomes compressed, the scalp puffy and swollen, the vagina dry, hot, and tender, the discharges offensive, and when the bladder cannot be emptied without the catheter, it is dangerous to trust longer to the natural efforts. If along with these symptoms, there is tenderness of the abdomen, fever, incoherence, restlessness, and exhaustion, delaying long to deliver is invariably followed by the most injurious consequences, as the cases related in the next report sufficiently prove.

Lond. & Edin. Monthly Journal of Medical Science, Jan. 1843, *p.* 59.

[The above opinion of Dr. Lee's will be corroborated by the fact,

that we have ourselves attended about 3000 labours, and have only had occasion to use the forceps about six times; so convinced are we of the efficacy of delay, assisted by secale, to carry the child through pelves, which formerly it was considered impossible for them to pass.]

100.—*Hæmorrhage from a Varix of the left Labium.* By Dr. Hesse. A married woman, nearly at the close of her fifteenth pregnancy, after having gone through her domestic duties in the morning, had laid herself down to sleep after dinner, (which she had eaten with appetite,) when she was suddenly seized with a profuse bleeding from the pudendum. The midwife was sent for forthwith; but she seeing the urgency of the case, called in Dr. Hesse, who only arrived, however, as the poor woman was on the point of expiring. The bed and bedding were soaked with blood; on examining the parts, the os uteri was found closed, and the vagina dry. At this moment the patient expired. The Cæsarian section was immediately performed; but the child was dead. The uterus appeared exsanguine. In the left labium pudendi, which was large and flabby, there was an opening of about half an inch in length from which black and tar-like blood was readily expressed. The opening led to numerous venous canals, both laterally and inwards, deep into the perinæum. The husband informed Dr. Hesse, that his wife had long laboured under a great enlargement or swelling of the left labium. This swelling appeared to be neither more nor less than an enormous varix.—*Medicinische Zeitung.*

Another case of death from the bursting of a varix in the thigh of a pregnant woman, is narrated by Dr. Killer, immediately after the one quoted above. Here the Cæsarian operation was also performed in vain; but as it was done one hour and a half after the death of the woman, it could not be expected to succeed.

Lond. & Edin. Monthly Journal of Medical Science, Feb. 1843, *p.* 152.

101.—*The discrepancy of opinion between British and Continental Accoucheurs, on various subjects.* By Dr. Robert Lee, F.R.S., Lecturer on Midwifery at St. George's Hospital. [This difference of opinion is brought forward by Dr. Robert Lee in his work on Clinical Midwifery, and shews the very extraordinary views of our neighbours,]

The *forceps* is very rarely employed in this country, before the os uteri is soft and well dilated, or before the head of the child has descended so low into the pelvis that an ear can be felt. It is used solely with the view, as our author says, of supplying that power which the uterus does not possess at the time. Hence it is chiefly in cases of great exhaustion, or of hæmorrhage, or convulsions, or of other accidents where it is necessary to expedite the delivery of the child, that the British accoucheur has recourse to the use of the instrument. If the pelvis be considerably deformed, or if the soft parts be still rigid and unyielding, he prefers others means to effect the same end.

Now mark the difference in these respects on the part of French physicians :—

"The employment of the long forceps in cases of distorted pelvis has been recommended by Baudelocque, Boivin, Lachapelle, Capuron, Maygrier, Velpeau, and Flammant, whose works contain ample instructions for its use, before the head of the child has entered the brim of the pelvis; and the last of these writers has expressed his belief, that the instrument is more frequently required while the head of the child remains above the superior aperture of the pelvis, than after it has descended into the cavity."

We need scarcely say how injudicious, nay how dangerous, such practice must necessarily be.

Take, again, the subject of *craniotomy*.

Dr. Lee thus clearly points out the circumstances which warrant and require the performance of this operation: "It is performed," says he, "by all British practitioners of reputation, whether the child be alive or dead, if the condition of the mother is such as to render delivery absolutely necessary, and the head of the child is beyond the reach of the forceps, or where, from distortion of the pelvis, or rigidity of the os uteri and vagina, it cannot be extracted if its volume is not reduced. This operation is performed from a conviction that, if neglected to be done at a sufficiently early period, the mother's life will be sacrificed, and the life of the mother is considered as much more important than that of the child."

The French condemn us for unnecessarily sacrificing the life of the child on many occasions! According to them, the operation of craniotomy should never be resorted to, until it has clearly been made out that the fœtus is dead, whatever may be the state of the mother at the time. Baudelocque expressly says, "nothing can excuse the conduct of the practitioner who would perforate the head of the child without previously knowing with certainty that it was not alive, a circumstance which can alone authorise us to employ the perforator and crotchet;" and Velpeau—whose authority, by-the-bye, we should not value much—goes even further than this, and maintains that, even when the child is dead, if the diameter of the pelvis is only 15 lines, or if the whole hand cannot be passed into the cavity of the uterus to turn the child, the Cæsarean operation is to be performed. Pity the poor French women who are entrusted to the tender mercies of such an accouchcur, say we. The practice of many of the leading accoucheurs in Germany is much alike. If the child be alive, and if there be no room for it to pass, the general rule seems to be to perform *hysterotomy*, or the Cæsarean section, rather than *craniotomy*.

Let us now for a moment consider the results—as well as we can judge from published reports; for, as Dr. Lee observes, not a few fatal cases on the Continent are never made known—of the former frightful operation.

Michaelis has collected the reports of 258 cases, of which 144 occurred in the last, and 110 in the present, century: of these cases

140 proved fatal. Velpeau tells us that the operation was performed 28 times between the years 1810 and 1820, and 62 times between 1821 and 1831—a statement which confirms what we have heard said, that the frequency of the operation on the Continent is, of late years, on the increase. Dr. Churchill says that it has been performed 316 times during the last ninety-one years, and that the mortality has been 52.8 per cent. for the mothers. (Is it not higher than this?)

Our readers need scarcely be told that the Cæsarean section has very rarely succeeded in this country. The cause is abundantly obvious; the unwillingness to have recourse to so terrible a resource, unless the life of the mother peremptorily requires it. "There is no eminent accoucheur now practising in London, who has been present at the performance of the operation upon the living body, or who would recommend it, if delivery could be effected by the perforator and crotchet."

Long may our countrymen continue to act on this principle. Where are the circumstances that can ever warrant the certain endangerment, nay often the more than probable sacrifice, of a mother's life for the chance—and, be it remembered, it is nothing more—of preserving that of her child? How few of the children that, "have been ripped from their mothers' belly," like the Thane of Cawdor, have been reared! and then think what a miserable end for a poor creature, after undergoing the sharpest pangs that flesh can know, to be subjected to a painful and bloody operation, not for her own, but for another's possible, advantage! Every principle of humanity and religion is opposed to such a practice; nay, even the cold dictates of mere science and physiology must condemn it. Why, then, it may be asked, should practitioners abroad have recourse to it with so little hesitation? The answer is simple, and will at once be surmised by those who are at all acquainted with medical practice on the Continent, and more especially in France. Patients, at least these among the poorer classes, seem to be regarded, not so much as fellow-creatures that have the same hopes and fears and the same feelings and destinies as ourselves, but rather as objects, so to speak, of natural history, which the learned doctor has to speculate and experiment upon.

The golden rule, not to do unto others what we should not wish done unto ourselves in similar circumstances, is too often forgotten by us all.

The last subject of discrepancy of opinion between British and Continental accoucheurs, that we shall notice at present, is the very important one of *inducing premature labour*, when the life of the mother is endangered by allowing pregnancy to go on to its full period.

"In numerous cases," we avail ourselves of Dr. Lee's own remarks, "it has been successfully employed in this country, and it is now ascertained that the operation is attended with little risk to the mother, and that nearly one half of the children are born alive and continue to live where it is performed after the seventh month.

In cases of great distortion of the pelvis, the induction of premature labour at an early period of pregnancy, before the sixth month, is likewise known to be a safe operation, and to render craniotomy and the Cæsarean section wholly unnecessary."

In Germany and Holland, the operation has of late years been frequently resorted to, with very satisfactory results; and in these countries the practice is gradually rising in estimation. Not so in France. There is scarcely a single obstetrical writer who approves, or has performed, it. Baudeloeque and Duges condemn it, and Mad. Lachapelle, the celebrated "sage-femme" of Paris, tells us that she has never either employed it nor seen it employed. The Academy of Medicine held a long discussion, in 1827, on the propriety of the practice, and the learned body then decided that it was unjustifiable under any circumstances! We have very little doubt but that this judgment will be reversed ere long, and strongly suspect, at the same time, that our enthusiastic confreres will be, one of these days, "going a-head" of their neighbours on this very subject.

Medico-Chirurgical Review, Jan. 1843, *p.* 241.

102.—*Theory of Menstruation.* By G. F. Girdwood, Esq., Paddington. [The following paper was drawn up by Mr. Girdwood, at the solicitation of Dr. Robert Grant; and it is right to be known that Dr. Grant was made fully acquainted with these opinions of Mr. Girdwood, in 1836, when he was not aware of the extent to which the important results of his experience had been anticipated by previous observers. These observations, however, do not lose their interest even now; and confirm, in a remarkable manner, what has more recently been promulgated respecting these doctrines. Mr. Girdwood exhibits a preparation taken from a young unmarried female, who he knew had menstruated about thirty-six times. The ovaries presented several indentations or small cicatrices, about the size of mustard seeds. From 32 to 34 of these marks could be detected; about 18 in one and 16 in the other ovary.]

The ovary of a female who has never menstruated is a soft pulpy mass, oval in shape, with a regularly defined outline, and possesses a smooth, polished, glistening surface.

In a female who has menstruated e. g. for ten years, and whose second lustrum of menstruation has thus passed, the external characters of the ovary have much changed. The soft, glistening, polished surface is now seamed and scarred throughout; its regular oval form no longer exists; deep corrugations have destroyed it; scars, some still isolated, appear, but a mass of cicatrices, irregular and ill-defined, generally marks the surface.

The ovary of a female approaching anility, who has ceased to indicate, by the usual periodic secretions, her capability for fecundation, has lost entirely its regular rotundity and plumpness, and

instead of a soft, pulpy, glistening substance, it is a grisly, withered, corrugated mass.

Small vesicular ovules exist in great numbers in the stroma or parenchyma of the ovary: they may be seen there in different stages of development; some, far in advance of others, are so increased in size, that even in the ovary of a six months' fœtus they are evident without the use of a lens.* As the female approaches puberty, some one of the ovules becomes more and more developed, approaches the surface, and, as in the instance I am now going to relate, it occasions a transparency of some degree over this small Graafian vesicle.

In June, 1834, a whole family were ill of scarlet fever, under the care of Mr. Richardson, of Bayswater, and myself. A girl, between eight and nine years, succumbed to the disease. In her the ovaries presented the usual polished, glistening surface of those of a female that had not menstruated. A spot, however, on the left ovary was distinctly perceptible, and arrested attention; it was to some extent transparent, slightly elevated, and surrounded by a net-work of injected capillaries. On cutting open this ovary the transparency and elevation were found to be owing to one of these vesicles, very much enlarged, and indeed now projecting immediately under the peritoneum.

Had this girl lived and reached puberty, what would have happened in respect to this vesicle? I have no doubt that it would have escaped from the ovary, passed through the Fallopian tube and uterus, and that this phenomenon would have been coexistent with the first period of menstruation; and had she died immediately after or during the act of this first menstrual secretion, appearances similar to what I have now to notice would undoubtedly have been found.

In December, 1832, Ann Davies died of scarlet fever, under the care of Mr. Webster, surgeon, of Connaught-terrace, and myself. The menstrual flux made its appearance *six hours before dissolution*. On the left ovary there was an oval cavity, large enough to admit a tare, and no doubt left by the recent escape of an ovule; its margin was unequal and floccular, and, as well as the walls throughout, of a deep-red colour. This female had menstruated for years, and the appearances which I consider as the usual indications of frequent menstruation, as already described, were evident on the surface of the ovaries.

The ovaries and the uterus of this female were carefully removed from the body, and the day after our examination were presented to Dr. Robert Lee, to whom I repeated (what I had previously communicated to him) my views on this and similar appearances,

* These were distinctly seen by me in a six months' fœtus of a pregnant woman who drowned herself in Paddington canal in 1834.

as detailed in this communication, but I could not then induce that distinguished pathologist to adopt my views.*

In my ease-book I find, under the date of May 23, 1835, the following memoranda:—"Emma Bull died yesterday, dropsieal, the result of diseased heart and lungs. Two years ago, during an attaek of asthma, after mueh pain in the pelvis, she menstruated, this being the first and only time she had ever had that seeretion. I opened the body this morning. The ovaries were plump and rather larger than usual, soft to the toueh, and glistening. There were here and there diaphanous specks, caused by the absorption or thinness of the peritoneal eoat, and the approach to the surfaee of the Graafian vesieles. There was no mark or sear whatever on the right ovary; but on the left, about the centre of the posterior surfaee, there existed a reddish part, about the size of a mustard-seed, which had quite the appearanee of an ulceration skinned over. The uterus and its appendages are in the possession of Mr. Webster."

During the same year a young woman also died under my care. She had menstruated three times. The surfaee of one ovary presented two eieatriees; that of the other, one similar to that described in the last ease.

In January, 1834, Jane Cumming, eighteen years of age, died of eonsumption. She had menstruated only six times. Mr. Webster, who was aware of my views regarding the exciting cause of menstruation, and of my anxiety to examine the ovaries, allowed me to be present at the autopsy. We could readily detect five depressions or cicatriees, three on one, two on the other ovary, of a sixth we were doubtful.

In August, 1838, I opened the body of Miss G., who had not completed her sixteenth year, and who had been regular for two years previous to her sudden death. In her I found about twenty-two of the usual marks on the ovaries. All these appearances, as they oeeurred in these different eases, were brought under the notice of my friend Dr. Robert Lee, but still without being able to eonvinee him that the views I entertained respeeting their eause, as above explained, were eorrect.†

* In the Lancet of June 29, 1839, is given the account of a meeting of the Medico-Chirurgical Society, at which a paper by Dr. Lee was read, on the corpus luteum, and when Mr. Solly mentioned that in a young lady who had died shortly after her menstrual period, and of whose chastity there could be no doubt, there existed appearances of a nature similar to those in this case, and which were perfectly in accordance with the views I have developed, the expression used is that "an enormous corpus luteum was discovered."

† Indeed, I cannot find that in his frequent published communications Dr. Lee takes any notice of these cicatrices until last year, when I perceive in his lectures he incidentally alludes to them. Mentioning the case Sir A. Cooper sent him, and those I showed him, he adds, that he "was not then aware that cicatrices are never present on the surface of the ovaria before menstruation has commenced." This is quite true, for although I had seen cases often enough to

What? I hear it asked, Are we to credit in our own species the fact of a female passing eggs every few weeks for twenty or thirty years? The statements I have made above, however, are of facts, and such as are capable of easy corroboration. Nor, indeed, is there any thing wonderful in a female passing periodically these numerous eggs, as asserted. Let her be supposed to continue for twenty or thirty years in this fecundative condition, with her ovaries performing regularly their functions, there would have been, even then, only from two hundred and forty to three hundred and sixty ova passed; and, tracing the state of these organs from their soft pulpy condition previous to puberty, through the regular changes they undergo as the woman advances in years, up to the withered, shrivelled, corrugated form they present when anility arrives,—is it too much to conceive that each ovary may have had from one hundred and twenty to one hundred and eighty times its surface opened for the escape of so many ovules?

At all events I repeat the fact, now attested by my numerous observations, that there exists a most close and remarkable relation between the number of cicatrices on the surface of the ovaries and the number of times a female has menstruated.

[Mr. Girdwood pays a just tribute of respect to the memory of Dr. Power, who had anticipated him in his investigations without his knowledge of this fact, till referred to his admirable treatise by Professor Grant.]

Lancet, March 4, 1843, *p.* 825.

103.—*Spermatozoa observed within the Ovum.* By Martin Barry, M.D. F.R.S., &c. Several months since I communicated to the Royal Society the fact that I had observed, and shown to Professor Owen and others, spermatozoa *within* the mammiferous ovum. The ova were those of the rabbit, taken twenty-four hours *post coitum* from the Fallopian tube.

I have this day confirmed the observation; several ova from the Fallopian tube of another of these animals, in a somewhat earlier stage, having presented spermatozoa in their interior, i. e. (as in the first observation) within the thick transparent membrane ("*zona pellucida*") brought with the ovum from the ovary.

Medical Gazette, April 7, 1843, *p.* 73.

satisfy myself of the truth of my views, the cases related in this letter were the first of so decided a character, which it was in my power to offer for the conviction of others.

ANATOMY, PHYSIOLOGY, & PATHOLOGY.

104.—OBSERVATIONS ON THE BLOOD, WITH REFERENCE TO ITS CONDITION IN THE MORBUS BRIGHTII.

By George Owen Rees, M.D. F.R.S., &c.

In proceeding to treat of the red colouring matter as a constituent of the blood-corpuscle, I must premise that great confusion has arisen from the terms, red particle, red globule, and red corpuscle, being regarded as synonymous with hæmatosine or colouring matter; the latter expression meaning, in its correct signification, nothing more than one of the constituent parts of the red corpuscles; there being a white matter also present in those bodies, which chemists have only noticed within the last few years, and have never yet ventured to define more particularly than as the white matter of the corpuscles.

Assisted with the evidence afforded by some recent microscopic observations, I have been led to determine on a larger scale what I believe to be the true relation between the red colouring principle or hæmatosine and the white matter of the corpuscles. The microscopic experiments to which I allude, demonstrated that the red corpuscles were closed sacs, containing a fluid within them; and made it a matter of interest further to ascertain whether the fluid were red; or, on the contrary, that the corpuscle owed its colour to the redness of the enveloping membrane, the fluid within being without colour. The former of these views is certainly the most generally entertained by micrographers, though we find Schultzé regarding the latter as the more correct;—and it is not easy to devise means for testing the truth of either position by microscopic examination.

In considering this question, it occurred to me, that if the blood corpuscle were a closed sac, and capable of being burst by the addition of water (a point proved by microscopic experiments), we might, by thus treating a large quantity of collected corpuscles and bursting them, be enabled to collect the burst cases in mass at the bottom of the water, which would hold their contents in solution;—that we could thus examine their colour, and by this simple experiment set the question at rest. With this view, the serum was decanted from a specimen of coagulated blood: the clot was next carefully washed in the serum, in order to get as many red corpuscles as possible into the liquor:

it was then removed, and the serum set aside to allow the red corpuscles to subside. Subsidence being complete, which occupied several hours, the supernatant serum was decanted, as nearly as possible without disturbing the deposit, and the deep-red thick mixture at the bottom poured into distilled water, in order to burst the membranes of the corpuscles. This aqueous mixture was then well stirred, and set aside; when, after a few hours had elapsed, I observed a white deposit at the bottom of the containing vessel, while the supernatant liquor remained quite clear, and of a fine red colour. Now, with a previous knowledge that the blood corpuscles are burst by water, and likewise that they are sacs containing a fluid, this experiment makes it pretty certain that the containing sacs are white, and the contained liquor of a red colour.

I do not wish here to enter at length on the description of what I feel confident in my own mind should be regarded as the nucleus of the blood-corpuscle; but merely have to state, that the microscopic examination of the white precipitate to which I have above alluded has completely confirmed my former views of this question; satisfying me that the deposit is made up of burst membranes of corpuscles, and of nuclei; the latter being apparently the same structures which some writers have regarded as corpuscles deprived of their red colouring matter—a condition, which from what has already been demonstrated concerning the corpuscle, can never occur; inasmuch as destruction of the inclosing membrane of the corpuscle is necessary before its colouring matter can be extracted; after which violence, it is obvious that any soft solid maintaining a definite form, and which can be seen and measured under the microscope, must be some constituent of original organized structure, which has now become disintegrated.

The opinion, that the membranes of the blood-corpuscles, notwithstanding their extreme tenuity, possessed in common with other animal structures the property of admitting the passage of fluids in accordance with the law of endosmose, and which was first noticed and described by Mr. Lane and myself in the Guy's Hospital Reports, has been, up to the present time, entirely supported by microscopic evidence. I am anxious, on the present occasion, to prove the truth of this view, by relating some experiments conducted on large quantities of blood; not only more firmly to establish a necessary premise to my conclusions, but also to shew that the correctness of opinions, the results of microscopic examination, occasionally admits of being proved by experiments conducted on masses visible to the unassisted eye. Now, if it be true that liquors pass in and out of the blood-corpuscles in proportions bearing a ratio to their specific gravities, then, if a large quantity of corpuscles be collected, we ought, by treating them with solutions of different densities, to be able to produce conditions which will differently affect their contents; the higher specific gravities taking out large proportions of those contents; the lower specific gravities removing less from within the corpuscle: and our liquors obtained after deposition has occurred ought to be differently coloured

accordingly: some should be deeply tinged with red; others almost white, having, from their less-specific gravity, entered the corpusele in large proportion, and only drawn out a very small quantity of its coloured liquor.

The results obtained from experiments conducted as above described have been in exact accordance with those microscopic views, the correctness of which they were intended to test: thus, when a quantity of corpuseles obtained by subsidence from serum were mixed with a solution of common salt, as nearly as possible of the specific gravity of the liquor by which the corpuscle was surrounded, and consequently of the same specific gravity as the liquor within, the mixture deposited the corpuseles unaltered, and the supernatant solution was colourless, owing to the difficulty of any admixture occurring between liquors of the same specific gravity through the membrane containing the red colouring matter. When, however, a liquor of higher specific gravity was mixed with another portion of these subsided corpuscles, then the conditions were completely altered; the subsided corpuseles exhibiting a darker colour at the bottom of the vessel, owing to their aggregating more closely from being to a certain extent collapsed; and the supernatant liquor, instead of being colourless, was tinged of a deep red; the liquor of higher specific gravity having extracted a large quantity of the contents of the corpuseles. When the reverse of this experiment was performed by making the mixture with a solution of less-specific gravity than the liquor within the corpusele, then the subsided mass was less compact, and somewhat lighter in colour, but still red; and the supernatant liquor exhibited but a feeble and scarcely perceptible tinge of pink, owing to the small quantity of colouring matter which could escape from within the corpuscles; while the liquor of less-specific gravity would enter in large proportion from without, swelling them, and thus making them occupy more room as a precipitate. It may be stated here, that a solution of any salt which does not act as a precipitant of serum, or even sugar, will serve to shew these effects; the conditions produced being then entirely governed by the specific gravity of the solutions, and in no way resulting from the chemical qualities of the salt. The next point to which I must allude, in connection with the subject of healthy blood, is the condition of the iron, and its true position in the organization of the corpusele. It has already been proved that the red colouring matter is a fluid contained within a vesicle; which vesicle allows of the passage of fluids from without to within, and *vice versa*, according to certain fixed laws: and I shall now endeavour to shew that the iron of the blood is contained in this red liquor, and not in any other of the constituent parts of the corpuscle. If we repeat the first experiment which I detailed, and which consisted in bursting the vesicles of a mass of corpuscles, and so destroying them by the addition of distilled-water, we can obtain a solution of their coloured contents, either by allowing the subsidence of the cases and nuclei and pouring off the clear liquor, or by performing a careful filtration through doubled blotting-paper, If the clear solution so obtained be now evaporated to dryness, I

find, by incineration of the dried mass, that it contains the whole of the iron of the corpuscles; while the white matter which subsides (composed of burst cases and nuclei), if well washed from adhering colouring matter, does not yield the slightest indication of the presence of the metal. We may therefore conclude that the red liquor of the corpuscles contains the whole of the iron, and in a very soluble form.

Those who have studied the appearances put on by the blood-corpuscles, as seen under the microscope, whatever may be their opinion concerning the method of re-production, will, I am sure, allow that corpuscles of a smaller size are constantly to be detected mixed up with those of mature growth: and I have myself, on several occasions, been satisfied, by experiment, that these smaller corpuscles possess precisely the same physical attributes as the larger ones, in relation to endosmodic phænomena. Now, it must be a necessary part of the process by which these small corpuscles arrive at maturity, that iron enter within the envelope, to supply one of the constituents of the red colouring matter; and to ensure this effect, two conditions are required:—1. A liquor containing iron in solution must be applied to the membrane of the corpuscle; and, 2. This liquor must be of a specific gravity less than that contained within the corpuscle, or it will not enter it in quantity. Both these required conditions are to be found as physico-chemical characteristics of the mixture of chyle and lymph, which enters the blood by the thoracic-duct, to which fluid all experimenters have given a lower specific gravity than the liquor sanguinis. Thus the specific gravity of the contents of the thoracic-duct in the human subject, which I lately analysed, was 1024, while that of the liquor sanguinis may be given at about 1052, at the least.

From other experiments, on the cat, the dog, and the ass, I am satisfied of the general truth of this statement. The iron which exists in the chyle is not contained in the crassamentum, which forms by coagulation; but we find it, on the contrary, as a constituent of the serum in a perfect state of solution, so that it may enter with facility through the membranes of the corpuscles: so perfect, indeed, is this solution, that, even after evaporating the chyle to dryness, we are enabled to extract the iron from the albuminous matters by digestion in water. It exists, in fact, dissolved in that constituent of the chyle which is called the aqueous extractive, and most probably in the form of lactate. Nature has, then, in this admirable manner provided for the introduction of iron into the corpuscle, by presenting it in a perfectly soluble form to the enveloping membrane, and dissolved in a liquor of a specific gravity suited to effect the necessary endosmodic actions.

Having thus shewn the reason why iron exists in the serum, and not in the crassamentum of the chyle—and also, why the contents of the thoracic duct are of less specific gravity than the liquor sanguinis—I wish to direct attention to the series of pathological phænomena which may be expected to arise when this due balance and arrangement of the physical properties of the fluids becomes destroyed, and when, by a diseased condition of longer or shorter

duration, the blood so far varies from its normal standard as to present obstacles to the performance of those actions on the part of the chyle which must be considered as necessary for the preservation of animal life.

From what has been demonstrated at the commencement of this paper, it is evident, that as the important changes of respiration occur in the colouring matter of the corpuscle, and since that colouring matter is contained within a membrane, a healthy condition of this envelope, such as admits of the transmission of liquors and gases according to certain fixed laws, is as necessary for the maintenance of life and health as is the perviousness of the larynx, trachea, or bronchi; and any general cause acting upon the corpuscle, so as to interfere with those properties, may be expected to destroy life as rapidly as would the closure of any of the openings communicating between the atmosphere and the internal pulmonary surface.

Again, let the blood become deranged so that its specific gravity is lessened, and we may feel assured, that if the physical qualities, more especially the specific gravity of the chyle, be not simultaneously affected, and that, too, in a due proportion, the result must be, that the red colouring matter, the great oxygenator of the blood, is no longer produced in its ordinary quantity; the ferruginous serum of the chyle not being able to enter the blood-corpuscle as in health. Again, if the degeneration above alluded to take place, we must recollect that all the solids of the body through which the blood courses are formed with pores and of material admitting of endosmodic action; and that it is impossible for solid constituents to preserve their health if constantly acted upon by the blood at a specific gravity of 1030 to 36, instead of 1052 to 57; the equilibrium of health being no longer preserved, and the watery blood inducing a like condition in the other solids. In throwing out these suggestions, I am prompted by a desire to draw the attention of the Profession to the great importance of the study of endosmodic action, as applied to pathology; many of the phænomena of the Morbus Brightii being apparently attributable to a condition of blood such as I have above noticed.

On examining the cases of this disease, the following will appear the prominent features to which attention should be more especially directed:—1. The excessive quantity of water in the blood. 2. The existence in the blood of one of the ingredients of the urine. 3. The existence of the same ingredient of the urine in the milk, and also in the fluids effused into various serous cavities. 4. The absence or deficiency in the urine of one or more of the natural ingredients of the excretion. 5. The general watery condition of the urine. 6. The existence of albumen in the urine.

Guy's Hospital Reports, April 1843, *p.* 319.

105—*Constipation for forty-five days.* Dr. James Johnson relates the following case, which had terminated fatally that day. The patient, a medical man, about forty-five years of age, had resided in

London about eighteen months, with the intention of practising there instead of in the country. Until forty-five days ago he suffered only from occasional spasms of the bowels, the spasms having nothing peculiar in them. His bowels were regular. During the last forty-five days of his life there was no evacuation whatever from the bowels, although every means had been resorted to by Mr. Lane and Dr. Sims to produce such action. About a fortnight before death he (Dr. Johnson) joined in consultation. The patient had then severe spasmodic pains in the abdomen, with almost constant vomiting. His stomach seldom retained anything; the ingesta being either brought up immediately, or two or three hours after being swallowed. None of the matter, however, vomited up, exhibited the slightest stercoraceous character. To afford relief, croton-oil, bleeding, and croton-oil injections, were used among other means, and Dr. O'Beirne's tube, which, however, could not be passed up any distance, and seldom more than half a pint of fluid, and never more than a pint, could be injected. During the whole of this time the distension of the bowels increased, and his extreme sufferings were only occasionally relieved by the internal use of opium, and by opiate frictions over the abdomen. Five days before death, at his own urgent request, half a pound of fluid mercury was administered to him. This produced no perceptible effect at the time, but the next day he was seized with spasms in the abdomen. The constipation remained. On one occasion his agony from the distended abdomen was so great that he begged it might be punctured to give him relief. He died on that morning at eight o'clock, and at four in the afternoon of the same day the body was examined. The tympanitis was enormous. On opening the abdomen there were scarcely any signs of inflammation having existed; there was no effusion, and the convolutions of the intestines were not adherent to each other. The dilatation of the intestines was very great; the colon was as large as the colon of a horse, and the other intestines were of proportionate magnitude. The diaphragm was thrust up to a remarkable height, and the stomach was so contracted that it was discovered with difficulty. The gall-bladder contained a few drachms of bile. On following the intestines nothing was discovered but wind. Not the slightest trace of the quicksilver which had been swallowed five days before could be seen, but in the sigmoid flexure of the colon was a dark, tarry-like substance, having a very peculiar odour, but neither in appearance nor in smell like a fæcal collection. No globules of mercury could be detected in it. The cause of the obstruction was found at the junction of the sigmoid flexure with the rectum, in which situation was a dense white scirrhus, surrounding the intestines for the space of three-quarters of an inch, and so completely closing the passage, that although the colon above was enormously distended with flatus, not the smallest quantity of air could be made to pass the stricture. The case was remarkable, from the cause of the forty-five days' constipation being *disease*. When constipation was a habit the bowels might be inactive for a longer period, but he (Dr. J.) had never before known such protracted constipation dependent on disease.—*Lancet*, *Nov.* 26, 1842.

RETROSPECT.

The improvement of the stethoscope might seem, at first sight, to be more the province of the Natural Philosopher than of the Physician: but we have evidence that when the natural philosopher attempts this kind of improvement, he is liable to fail, simply, because it is an advantage for the same individual to be acquainted with disease and with its investigation. In Dr. C. J. B. Williams, we have both the natural philosopher and the practical physician, and consequently any suggestions which he offers with respect to the improvement of the stethoscope, we may receive with confidence. We will not in this place take up the reader's attention in recapitulating the various improvements or suggestions which have been, from time to time, made, with reference to this valuable instrument; but will content ourselves by stating, what seems to be the best kind of instrument at the present day. And, once for all, we will take the liberty of saying, that practical utility has invariably been our guide in selecting the mass of valuable matter which is condensed in the pages of all our preceding volumes. Being ourselves engaged in the daily routine of a large and active practice, we invariably ask ourselves, before selecting any article, whether the information which it contains is likely to be useful to us, as practitioners in Medicine or Surgery:—and if we find nothing which is likely to prove such, we hesitate not to put it on one side, however interesting in a theoretical point of view it may be. Our work is compiled for men in active practice, who, when the toil of the day is over, may sit down and read what is likely to benefit them in the active bustle of life, without being compelled to turn over page after page of a voluminous journal before they find what they want.

Dr. Williams pointed out, many years ago, "that sounds are best conducted by bodies of an elastic tension, resembling that of the sonorous body; and that, "on the other hand, bodies differing in elasticity are bad recipients of each other's vibrations. Thus, wood, although an excellent conductor of sounds generated in itself, or in other solids, receives but imperfectly those produced in air. But by thinning wood, and extending its surface in contact with air, it is much more readily affected by the vibrations of air, and becomes the best medium for transferring to air the sounds of denser solids:" hence, the *source* of the sound, whether it be from the air within the chest, or from the solids of that cavity, will have great influence

on the manner in which that sound can be communicated by a stethoscope, or by any other means. Sounds produced in air, as vocal or breath sounds, will be best transmitted by an enclosed column of air; those produced in solids, as heart and friction sounds, are best communicated by rigid solids of the least density. The hollow end of the stethoscope is for the purpose of bringing into close contact with the walls of the chest, as large a surface of air as possible, and to convey the pulses of this air as directly as possible to the ear. The solid walls of the stethoscope have a considerable share in communicating sounds, and this depends in a great measure on the formation of the pectoral end, by which it receives the vibrations. For this purpose, Dr. Williams suggests a stethoscope with a bugle or trumpet end, the edges of which being made very thin, and applied flat on the walls of the chest, are most readily affected by their vibrations. The wood must be of a light rigid texture, as sycamore. Stethoscopes have generally been provided with perforated stoppers to shut out diffused sounds, and to transmit by the central canal aereal sounds from a limited spot, This is of great use in distinguishing pectoriloquy from diffused bronchophony. In Dr. Williams' stethoscope, this object is accomplished by reversing the instrument, and applying the ear to the bugle or trumpet end, and the proper ear end to the chest. This instrument is minutely described in article 1. (1.*)

The use of tartar emetic in cases of fever, whenever there is undoubted evidence of determination of blood to the head, producing head-ache, loss of sleep, and delirium, is too well known to require any notice in this place; but its use, combined with opium, in the advanced stages of nervous fevers, is a much more modern practice, and we believe the credit of its first introduction into practice with this particular purpose, is due to Dr. Graves, of Dublin, who, in his work on clinical medicine, gives a very interesting case, amongst others, in elucidation of his particular practice. It was that of Mr. Cookson, a medical pupil, who was attacked with fever, which seemed to be going on well for seven or eight days, when symptoms of an hysteric character showed themselves: and, it must be remembered, that in most cases of fever when such is the case, nervous symptoms of the most formidable character will generally come on. On the 14th day his tongue was black and parched, his belly tympanitic, and he had been raving for the last four days, not having slept an hour for four or five days and nights. Dr. Stokes saw the case. Besides other means, the cautious use of opium was resorted to, Dover's powder, and opiate enemata; which, failing in procuring sleep, a full dose of black drop was given, with the conviction, that if this failed in procuring sleep, he would have no chance of life: next morning this was found to have failed; he had universal tremors, and subsultus tendinum, his eye was suffused and restless; he had been lying for some days entirely on his

* The figures at the end of this paragraph, and throughout the following pages, refer to the articles in the present volume, in which the different subjects here referred, to are treated of at large.

back, his tongue was dry and black, his belly tympanitic, pulse 140, quick and thready; his delirium was chiefly shown in short broken sentences, and in a subdued tone of voice; and it was now eight days and nights since he had slept. Under these circumstances, Dr. Graves suggested a similar medicine to that which he found so successful in delirium tremens, viz., a combination of tartar emetic and laudanum, in the following form:—℞. Ant. Tartar. gr. iv.; Tinct. Opii, ʒ i.; Mist. Camphoræ, ℥ viij. A tablespoonful to be given every second hour. The success of this was magical, and the patient recovered rapidly. Of course, it would be well in these cases, to proportion the antimony and laudanum to the degree of congestion and nervous symptoms. A certain amount of congestion might not contra-indicate the remedy, provided we increased the tartar emetic and diminished the laudanum; and where the nervous symptoms preponderated, we might reverse this, give more laudanum and diminish the tartar emetic. (2.)

It would be impossible for us, in this place, to give even an analysis of the papers of Dr. Golding Bird, on the physical and pathological characters of urinary deposits; we will therefore only refer the reader to the subject in our fourth article, where it is very copiously treated of. (4.)

Dr. Mettauer, of Virginia, recommends an article as a very powerful astringent, which we cannot find noticed in any of our works on therapeutics, viz., the unripe fruit of the persimmon, *(Diospyros Virginiana).* It is well known in all the temperate regions of the United States, as imparting a very rough taste to the tongue, and from this circumstance, Dr. Mettauer was induced to try it as an astringent in a case of infantile cholera. It succeeded admirably, and has since been tried successfully in a variety of cases, where an astringent was required. It may be used in the form of infusion, syrup, or tincture. The infusion can only be properly made during the seasons which afford the fruit; but as these seasons are the summer and autumnal months, when diarrhœa is generally prevalent, it may be found a good remedy in those countries only where the fruit can be readily obtained. The infusion may be made by infusing from one to two ounces of the fresh immature fruit, slightly crushed, in a common teacupful of boiling water, and of this, from one to three teaspoonfuls may be given to an infant every hour, if necessary: an adult may take from one to three tablespoonfuls every hour or two. The tincture, however, will probably be found most useful, especially to British practitioners who cannot so readily procure the fresh fruit. It is made by digesting one pound of the green persimmon, recently procured, and a little crushed, in one pint and a half of port or any other wine, exposed daily to the solar heat for 14 days, and then filtered. From two to four teaspoonfuls of this tincture is a dose for an adult; and half, or one teaspoonful for an infant. But it is more applicable to disorders of the adult than to those of the infant, on account of the wine which is used. An acetous tincture may also be made by digesting two pounds of the recent fruit, a little crushed, in two pints of strong pure apple-

vinegar, 14 days exposed to the solar heat. This acetous tincture is chiefly used externally, for gargles and cataplasms. It is valuable in tonsillary affections, and in chronic catarrh. This medicine may safely be introduced into this country, and when a variety of astringents are required, it may occasionally be found to supersede our more favourite remedies of this class. In uterine hæmorrhage and in menorrhagia we may find it useful, not only internally, but externally applied. (5.)

A very remarkable case of recovery after suspended animation is related by Dr. Douglas, of Hâvre. The man was immersed about fourteen minutes, and respiration did not commence for eight and a half hours: there was not the slightest appearance of animation on his being brought into the Hospital at Hâvre. The whole treatment consisted in the application of hot bags of sand round the body—lavements of hot water (to which was subsequently added spirits of turpentine and tincture of assafœtida)—and friction. Artificial respiration was tried, but not persisted in. The chief treatment, however, seems to have been by means of the most persevering friction, performed with dry flannel, by relays of four men every half-hour: this was persisted in most indefatigably for eight hours and a half, when respiration commenced very feebly, followed in twenty-four hours by reaction, to such a degree, that eight leeches were applied to the temples, and six ounces of blood taken from the arm. This slight depletion, however, caused so great a collapse, that it was necessary to have recourse to stimulants. Typhoid symptoms set in and continued for six weeks, but the man ultimately recovered. Dr. Todd reminds us that in these cases electricity is very valuable, when brought to bear on the medulla oblongata, which can easily be accomplished by means of the electro-dynamic machine, by placing one wire on the back of the neck and the other at the diaphragm. The value of the application of heat in all cases of suspended animation, has been of late very much questioned by several eminent physiologists. The arguments on this subject will be found in Retrospect, Vol. IV., Art. 27, and Vol. V., Art. 15. Dr. Edwards asserts that the progress of asphyxia is much more rapid at high than at low temperatures; and that when the body is heated artificially, or by exercise, it consumes more oxygen in proportion, and consequently requires a greater number of respirations: hence, if we wish the body to do with as little oxygen as possible till respiration is established, we ought to keep the surface cool, and not hot, as is usually done, in resuscitating drowned persons and still-born children. This theory, however, will require some modification since the recent investigations of M. Liebig. In these cases, the mode of applying electricity may be varied. Leroy d'Etiolcs employs galvano-puncture, by introducing a fine needle on each side, between the eighth and ninth ribs, until they reach the fibres of the diaphragm. He then establishes a galvanic current between the needles by means of a pile of twenty-five to thirty pairs of plates, an inch in diameter. The diaphragm is thus made to contract, and an inspiration is accomplished: the circle is then interrupted, when

the diaphragm, urged by the weight of the abdominal viscera, and aided by gentle pressure made on the abdomen with the hand, returns to its former position, and an expiration is effected. In this way, the two respiratory acts are made to succeed each other, and regular respiration is re-induced. (6.)

We have mentioned in a former volume, a very interesting case, to shew the value of electricity in stimulating the nervous system in cases of poisoning by laudanum, (Vol. IV., p. 21.) Several other cases of a similar description have been since published, in which the power of this agent in keeping the patient awake was remarkable, Dr. Page, of Valparaiso, has used the same means in a case of poisoning by a large dose of powdered cubebs. The patient took half an ounce of this drug on going to bed, and was found next morning with his face red and swollen, lips dark purple, veins of the forehead and temples turgid, eyes rolling upwards and injected, with the pupils contracted to a point, respiration very slow, short, and gasping; and with all the other symptoms of comatose sleep. Every method that could be thought of to rouse him was tried in vain, he soon returned to the same state of insensibility, and death seemed to be inevitable. In this case, Dr. Page tried the electro-magnetic battery with success. With an assistant rapidly rotating the wheel, he applied the balls at first to each side of the neck and ran them down behind the clavicles. The arms and body now moved convulsively, but the patient lay as unconscious as before: but on applying one ball over the region of the heart, and the other to a corresponding point on the right side, the patient opened his eyes widely, his head and body were thrown convulsively forward, and he groaned. He again sank back into his former state, but on applying the balls to the same regions, he became conscious, and ultimately recovered. Dr. Page in this case used a large horse-shoe magnet mounted upon a stand, in a verticle position, with an *armature*, fixed upon an axis between the poles so as to revolve in front by means of a wheel; but a much more portable machine is now made by most surgical-instrument makers, and which ought to be in the possession of every general practitioner. That used by Dr. James Russell, in a case of poisoning by laudanum, in King's College Hospital, would be more portable and convenient than the one used in this case by Dr. Page. In the case of Dr. Russell's, the efficacy of electricity was equally striking: it was that of an infant which had taken twelve drops of laudanum four hours and a half previously, and on admittance into the hospital, was in a state of insensibility, surface cold and exsanguine, pulse imperceptible, and breathing only at intervals of half a minute; in a short time the child seemed to be quite dead. By means of galvanic shocks passed through the body, however, it was resuscitated. An electro-dynamic apparatus was employed, one pole being placed over the upper part of the cervical region of the spinal column, and the other over the cutiform cartilage of the sternum. The greatest benefit resulted almost immediately. Rapid action of the diaphragm followed each application of the poles of the battery; a few short inspirations being drawn, followed by a deep

breath. Whenever the breathing flagged, the same means were resorted to; and eight hours and a half after the laudanum had been taken respiration became established. The child ultimately died; but not before the efficacy of this remedy had been fully proved. (7, 8.)

The treatment of phosphatic depositions in the system has been referred to by us in two former volumes, viz. in Vol. IV, p. 33, and Vol. VI, p. 212. On such an interesting subject, however, we cannot help bringing before the reader any fresh suggestions and corroboration of former statements, which may come under our notice. The treatment of phosphatic deposits consists chiefly in changing the character of the urine from an alkaline to an acid excretion; a much more difficult thing to accomplish, than to change it from being acid to alkaline. Mr. Ure first pointed out, about a year and a half ago, that when a certain portion of benzoic acid, or of a soluble benzoic salt, is introduced into the human stomach, a remarkable change takes place in its passage through the kidney: the urine becomes possessed of an acid peculiar to the urine of the horse, cow, and other graminivorous animals, and to which Liebig has given the name of *hippuric* acid. The uric acid becomes in short wholly superseded by the hippuric; and the peculiarity of this latter acid is, that when it combines with the soda, ammonia, and potash existing in the animal fluids, it makes them very soluble. Thus, the hippurates of soda, ammonia, and potash, are easily soluble, while the urates are not so. Mr. Ure has since published an interesting case on this subject, which clearly shews the value of this mode of treatment. The urine was very offensive, emitting a pungent ammoniacal smell, alkaline to litmus, and effervescing briskly on the addition of a few drops of hydrochloric acid; almost as soon as discharged, it threw down a white flocculent sediment, consisting of phosphate and carbonate of lime; it did not afford any uric acid. The patient took ten grains of benzoic acid twice a day and gentle aperients, and was ordered to live well but plainly. The urine soon became quite clear and natural in all respects, and acid to litmus. On a recurrence of the alkaline deposit, the common routine of practice was tried, in order to see what effect it would produce: nitric acid in full doses, three times a day, with an opiate at night; hydrochloric acid, sulphuric acid combined with sulphate of iron, bark, tartaric acid in conjunction with sal-ammoniac, were in turn freely administered, but to no purpose, for the urine continued alkaline and loaded with white sabulous matter. On resuming the benzoic acid, the effect was equally beneficial as at the first. Here, therefore, we find a patient in the prime of life, stricken with slow consuming disease, complaining of languor and lassitude, progressively losing flesh and strength, with his urine throwing down a white starch-like sediment, and decidedly alkaline. In such a case, benzoic acid will be found invaluable in changing the nature of the urine, and consequently in obviating the irritation which such urine occasions in the membranous surface with which it comes in contact. (9.)

We believe that few diseases have been more confounded with

each other than inflammation and the different forms of neuralgia. How many patients have been bled, blistered, and salivated for neuralgia under the false idea that there existed severe inflammation, when probably a good dose of morphia would at once have given relief, and thus pointed out in some measure the nature of the affection. This is especially applicable to cases of neuralgia on the surface of the chest and abdomen. Dr. Bird points out that the same mistake is often made in some forms of neuralgia depending on uterine irritation. The uterus occasionally becomes exceedingly painful a few hours or a few weeks after labour or miscarriage, and this pain may extend over the whole abdomen, attended with a suppression of the lochial discharge, and a disordered state of most of the functions of the body, giving rise to symptoms which are often mistaken for puerperal fever and peritonitis. We shall generally be able to distinguish the true nature of this affection by the following symptoms:—the pain comes on in paroxysms, the patient often complains even before the abdomen is touched, and sometimes she will bear considerable pressure when her attention is attracted to some other part; she has great depression of spirits and a general disposition to hysteria. (10.)

M. Ricord has perhaps watched the effects of iodide of potassium on the system as much as any one, and he has drawn up a set of excellent remarks on the subject, which ought to be well known by every practitioner who is in the habit of using this valuable drug. The skin seems to be the most susceptible of its influence, and during its exhibition almost every cutaneous affection may be simulated. Salivation also is a common effect of this medicine, resembling more the ptyalism of pregnant women than that from mercury; no inflammation or ulceration being present, no taint of the breath and no enlargement of the salivary glands, as when mercury is exhibited. The kidneys are remarkably acted upon by this medicine, as much as from thirty-five to forty pints of urine being passed daily in one case under its influence, and this enormous secretion ceasing when the medicine was discontinued. The mucous membranes are also acted upon: that of the eye may become injected and tumefied, the nose may seem to be stuffed as from coryza, though unattended with sneezing. The genito-urinary organs are among those which are most susceptible of the influence of the iodide of potassium. An old blennorrhœa will frequently be aggravated. Another effect of this medicine is said to be, to cause the determination of diseased action to the skin, and hence it may prove valuable in cases of measles and scarlatina, when these affections are unattended with much fever; and even in bad cases, it is said to induce a healthful reaction under the most desperate circumstances, in doses of one or two grains every twenty-four hours for three or four days, according to the age of the patient, dissolved in sugared water, and given as an ordinary drink. This action of the iodide may even be assisted in cases of scarlatina by the external application to the chest, of the compound tincture of iodine, diluted with three or four parts of water. (11.)

We wish to call the attention of the profession to the use of sub-nitrate of mercury in cases of tetanus. We do not recollect any cases in this country in which this medicine has been tried, but from the report of a case by Dr. Bauduy, of Cuba, we should think that its use would be attended with advantage. In this case, which was caused by a small splinter being driven under the integuments of the left thigh, the wound was freely dilated, the actual cautery applied, and next morning ten grains of the sub-nitrate of mercury was administered. This medicine is found to act powerfully as an emetic, cathartic, and diaphoretic; and in traumatic tetanus, Dr. Bauduy says that its effects are often wonderful. The dose may be repeated in a day or two, according to circumstances. (12.)

Although paralysis of the muscles, those of the face for example, seldom exists without some organic lesion, yet we sometimes have reason to believe that it is truly functional, and unattended with any particular disease. In such cases we shall find strychnine of value; and we think that its powers have been miscalculated, on account of the indiscriminate use which has been made of it. Even when the paralysis is originally owing to some lesion or effusion, that cause may have been remedied, and nothing remains but a continued inability on the part of the muscles to regain their powers. Here, then, is a case in which strychnine would be of great use, as well as when the paralysis is strictly functional. When the face is the seat of the affection, the strychnine may be applied to the cuticle in the following way:—About one drachm of a solution containing about three grains of strychnine to an ounce of alcohol may be applied to each side (when both sides are affected), three times a day, and the absorption assisted by friction; when only one side is affected, it will be sufficient to confine the application to the muscles implicated. In a case reported by Dr. Joslin of New York, this was persevered in for above two months, with success. A blistered surface renders the effects of the application more powerful. (14.)

If Mr. Benson's method of preventing lead colic in white-lead manufactories be found, on a lengthened trial, to be successful, we should recommend its adoption in all other cases where the same poison is used by workmen. It has long been regretted that colic is so prevalent in these white-lead manufactories. Mr. Benson saw a statement some time ago, that in France "sulphuric lemonade" was very successful in preventing the prevalence of this malady. He has therefore been trying a mixture of treacle-beer, sulphuric acid, and bicarbonate of soda, for his workmen, who were allowed to drink it at pleasure. The formula for preparing this sulphuric beer is given at page 62; and it will only be necessary to add, that it has completely answered in banishing this painful affection from the premises. It is supposed that the highly poisonous carbonate of lead is by this means converted into the innocuous sulphate. The addition of soda gives a pleasant briskness to the beer, but is not added in sufficient quantity to neutralize above one half of the sulphuric acid, so that quite sufficient of this remains to convert the carbonate into the sulphate of lead. (15.)

We have before alluded to the occasional value of iodine in hydrocephalus; and have, since our former notice of this medicine, tried its efficacy in several cases in our own practice; and, although we should hesitate to place that confidence in it which Roeser, Fluder, and others seem to do, we think it may prove useful in some cases where disorganization has not proceeded too far. Dr. Christie has published a case in which it seems to have acted with advantage: it was the case of a child eight years old, which had been ill a week, and had an attack of convulsions the previous evening; the symptoms altogether seemed to indicate acute hydrocephalus. Venesection, calomel and jalap, and evaporating lotions, were had recourse to, besides other remedies. The disease, however, advanced, and convulsions again recurred:—Two grains of iodide of potassium, with half a grain of iodine were now given every four hours, and the head rubbed with a weak ointment of the biniodide of mercury. For some days no improvement took place, but ultimately the disease gave way, and the child recovered. We said that we had tried the same means in our own practice: the result, however, has been only in two cases favourable; in several others we have thought that the symptoms became improved for a time, and felt sanguine of success, but were disappointed. (16.)

In the same disease, where water has accumulated so as to be evident by its fluctuation, and the increased size of the head, we have many examples of relief being afforded by drawing off the liquid: one is given in our 17th article, in which eleven ounces were drawn off by the first operation. The child had been the subject of frequent convulsions before this relief was afforded it, which did not again return for eleven weeks. The head refilled in some measure in about four weeks, and was again emptied. From some mismanagement on the part of the mother, the disease gained ground eleven weeks after the first operation, and the child died, but not before the tapping was clearly proved to have acted beneficially, and in one respect very remarkably, viz., by making the child sensible to light, which had not previously been the case. (17.)

In a case of diabetes mellitus, in the Hotel Dieù, in which the man passed fifteen quarts of urine daily, of a highly saccharine quality, the ioduret of iron in doses of five grains four times a day, combined with the usual animal diet recommended in such cases, seemed to have a remarkably good effect. Besides the ioduret of iron and animal diet, he took a bottle of claret daily, and a flask of Bagnols wine. (18.)

We pointed out in our last volume, the use of potatoes in sea scurvy, and we have again an opportunity, through Dr. Baly's interesting paper, of calling the attention of the profession to the subject. The potatoe has been known for years past to be useful in this disease, and is referred to in works on the subject, but it has not until lately been sufficiently impressed on our minds that this vegetable ranks very high as an anti-scorbutic. Dr. Baly, by its use in the Milbank Penetentiary, has almost completely banished the disease which was seldom absent from the prison; and concludes

from a number of observations, that from three to six pounds of potatoes weekly ought to form part of the dietary of all prisons, workhouses, pauper lunatic asylums, and similar institutions. It is remarkable that this useful vegetable, considering its cheapness, has not been more generally used in these institutions. In some of our largest pauper asylums, where the food has not been at all deficient in quantity, and where every thing seems to be conducted in the best manner, the potatoe has been given in too small a quantity, and the consequence has been the existence of scurvy. In other places, as in the Stafford County Goal, where the quantity of food is less, but where the potatoe is allowed in larger quantity, the disease does not appear; and if we may judge from facts, we feel persuaded that the recent resolution of the magistrates of the city of London, to exclude potatoes and other succulent vegetables from the dietary of their prisoners (with the exception of a small quantity contained in a pint or two of soup allowed weekly), will prove prejudicial to the health of the inmates. The antiscorbutic virtue of the potatoe, various fruits, succulent roots and herbs, consists in one or more organic acids being dissolved in their juices, such as the citric, tartaric, and malic acids. The potatoe has been found, according to Einhoff, to contain the tartaric acid combined with potash and lime: according to Vanquelin, it is the citric acid which the potatoe contains. We may bring forward the evidence of Liebig in explanation of the antiscorbutic virtues of this and most other non-nitrogeneous articles of diet. The salt which sailors take so largely, affords an abundant supply of alkali to the blood, while the chief part of their diet consists of non-nitrogenous food. The consequence is, that the oxygen taken into the system acts exclusively on the tissues of the body, and when long continued, is almost certain to end in scurvy, the salt assisting in producing these rapid changes. When more nitrogneous articles of diet are substituted they become acted upon by the oxygen instead of the tissues of the body; hence the good effects of vegetable acids, fresh vegetables, sugar, wine, beer, wort, treacle, potatoes, &c., all of which contain more or less nitrogen. (19.) M. Irven recommends the tincture of cantharides as a remedy in cases of scurvy, in doses of from ten to twenty drops three times a day, increasing the quantity taken in twenty-four hours to about eighty drops. (3.)

An important measure has lately been adopted in Guy's Hospital, namely, that of devoting certain wards for the study and elucidation of those diseases of the kidneys which are attended with the secretion of albuminous urine. We hope the same measure may be adopted as a means of studying many other diseases, and the best mode of treatment, as it will chiefly be by collecting in this way a great number of facts, that the safest improvements in medicine may be expected to arise. *Mercury, Elaterium, and Antimonials*, seem to have formed the three leading indications of treatment, as far as medicine was employed, and the value of each of these seems to have been tested: not, however, that one was always given to the exclusion of the others, for we find that in many cases treated under

the head of "*Treatment by Elaterium*," that the third mode of treatment, by *Antimonials*, was also combined. The mercury, elaterium, and antimony however, constituted the principal medicines which were employed, and each seems to have been fully tried. Antimonials and elaterium, however, seem to have been used at one time or another in most of the cases reported. In the case which we have published, as an example of the treatment by *Mild Mercurials*, we find that two grains of hydrarg. c. cretâ, one grain of p. scillæ, and five grains of ext. papaveris were given every night at first, and afterwards half a grain of pulv. digitalis, a quarter of a grain of pulv. scillæ, and one grain of pil. hydrarg. three times a day, the digitalis being afterwards omitted. But we perceive that from the first fifteen minims of antimonial wine was given three times a day; and afterwards one-sixth of a grain of elaterium combined with two grains of ext. papaveris, was administered. The elaterium was afterwards diminished to one-tenth of a grain, combined with two grains of ext. papaveris, three times a day. So that in this case we have a combination of all the three kinds of medicines, mercury, elaterium, and antimony; and judging from all the cases published in the last number of Guy's Hospital Reports, we should say that in most cases of albuminous urine, accompanied with a swollen and puffy face, anasarca more or less extensive, dry skin, alkaline urine, with precipitation of albumen by heat and the addition of nitric acid, that a combination of treatment consisting of small doses of mercury, with antimonials and elaterium judiciously combined, is the best that can be adopted. (20.)

The treatment of pneumonia in children has been ably treated of by Dr. Willis, but we cannot subscribe to his opinion that in the treatment of this affection in children, depletion by blood-letting holds the first rank as a curative agent. There are but few cases of pure idiopathic pneumonia in these subjects; they are almost invariably brought on or attended with chronic bronchitis, in which disease, as well as in pneumonia, it is becoming more and more acknowledged that we have almost every advantage in the use of tartar emetic, without the dangerous consequences which so often follow the loss of blood in children. There are no doubt many cases where moderate bleeding by lêeches might be called for, and where the strength of the patient might counteract its prejudicial result, but we should say that in no case ought copious bleeding to be resorted to with more caution than in young children, in whom there is such strong disposition for the blue stage of asphyxia to follow. We should therefore, hesitate how we adopted Dr. Willis's practice in this respect: he will often take away four ounces of blood by venesection, and if the symptoms are not relieved in a few hours, apply four or six leeches beneath the scapulæ, in a child of two years old. We repeat that we should be much more moderate in our use of the lancet and leeches, and trust rather to the antimonial treatment which Dr. Willis properly describes as being more especially beneficial when the pneumonia has developed itself out of previous catarrhal symptoms, or in which it supervened on measles,

or came on in the course of hooping cough. In such cases, antimony given in doses of a quarter of a grain, to a child two years old, repeated every ten minutes till free vomiting is produced, and afterwards continued every two or three hours for forty-eight or sixty hours, has often appeared to be of the most essential service; and we may add, that a very important and valuable addition to this medicine in our own practice, has been the tincture of lobelia, in doses of five, ten, or twenty drops. But this medicine will be found more especiallp useful when the attack commences with bronchitis, and threatens to end in asphyxia. (21.)

In the treatment and prevention of gravel, calculus, and gout, we find many excellent directions from the pen of Mr. Jones chiefly founded on the views of Liebig. These affections are so frequently the result of an excess of uric acid in the system, that to remedy this diathesis is often sufficient to prevent the former. One important indication of treatment throughout these cases, is to promote the action of oxygen on the system, by which the excessive formation of uric acid is counteracted; the oxygen changing it into urea and carbonic acid. This may be accomplished in various ways, and first, by *exercise*, which if taken in moderation, assists materially in the absorption of oxygen into the system, but if carried to excess may depress the vital powers, and thereby encourage the formation of an excess of uric acid, the very substance which we wish to diminish. Other means will materially assist in the formation of oxygen: the avoidance of too much sleep, and hot rooms—the exhibition of the different preparations of iron, by which the amount of red particles is increased. Another very important means of accomplishing the same object is *food*. This may even rank above exercise in many respects. The great principle to be had in view, is *to diminish the non-nitrogenous principles in the blood*. Liebig has shewn "that the substances which contain no nitrogen, by combining with the oxygen which has been inspired, hinder its action on uric acid": and hence the diet in these cases ought to be such as will not to any considerable extent interfere with the action of oxygen, as nitrogenous articles of diet,—a moderate quantity of meat, with a much smaller quantity of bread, the meat of course to be proportioned to the degree of exercise,—in short, all articles which contain much starch or sugar, are to be avoided in these cases, or given in moderation; as bread, potatoes, rice, apples, pears, and all kinds of fruit, fat, butter, &c. The non-nitrogenous bodies in the blood may also be diminished by certain medicines, which act on the liver, as calomel, aloes, colchicum, colocynth, &c.; and the uric acid may be kept in the ultimate textures in a state of solution by the alkalies. Mr. Jones considers that whenever the uric acid diathesis exists for any length of time, it must necessarily produce a disposition to *gout*: and however unintentional it may have been, we can see that most of the measures which have been recommended for the cure of gout by different physicians, have been such as would promote the action of oxygen in the system. "In the language of Liebig, they have declared that the want of oxygen is the cause of

gout, and the promotion of its action the only means of effecting a cure, or of hindering a return of the complaint." Thus, certain circumstances, as excessive eating, sleeping, and want of exercise, constipation, vegetables, and little secretion by the skin, all lessen the amount of oxidation which is necessary to remove certain substances which result from the metamorphosis of the tissues of the body. Liebig's views of gout are "that it is an inflammation in parts in which the usual changes which the oxygen effects are unable to take place, in consequence of an excess of the non-nitrogenous principles in the body; whilst rheumatism or the "universal gout" seems to arise from the changes being checked by the action of cold on the skin." It is an interesting question which has not yet been satisfactorily answered "whether the uric acid is, in the state of health, produced in the ultimate textures, and there undergoes its changes into urea, in which state it is carried to the kidneys by the circulating blood (and the existence of urea in the blood in Bright's disease, and in cholera, is in favour of this view); or whether in the ultimate textures, some other substance is first formed from the tissues, which, when it arrives at the kidneys, is there changed into uric acid, and afterwards into urea in the way that has been pointed out. If this last be the case, the substance out of which the uric acid is formed must exist in the blood." There is no doubt that the one or other of these states must exist; "either there is an excess of that substance which is capable of producing uric acid when it comes to the kidneys, which is passed during an attack of gout from the systemic capillaries to those of the kidneys, and there gives rise to the excess of uric acid which appears in the urine, or what is perhaps more probable, urate of ammonia itself (formed from the metamorphosis of the tissues) exists in the blood in larger quantities than usual." Whatever view we take of this subject, we arrive at the conclusion that there is a want of proportion between the oxygen and the non-nitrogenous ingredients of the system, and hence our treatment must in a great measure be to proportion the oxygen to the demands of the system. Sleep lessens the quantity of oxygen taken into the system by diminishing the number and extent of the respirations, and sedentary habits act in the same way; excessive eating loads the blood with those substances which must have oxygen to carry them off; by taking acids the uric acid is rendered less soluble; wines are injurious, from the alcohol they contain, and acid wines are doubly injurious, by both acid and alcohol adding to the excess of non-nitrogenous substances, for which the oxygen has a greater affinity than it has for the nitrogenous substances. We find that abstinence assists materially in restoring the proper proportions of oxygen and nitrogen, by adding no fresh fuel, and thus giving the oxygen an opportunity of consuming those non-nitrogenous (carbonaceous) substances, which had been previously so heaped up as to threaten to put an end to all action. Exertion increases the respiration, and thus causes more oxygen to be absorbed, and more action to take place. Purgatives remove the bile, which contains an excess of carbonaceous matter,

on which the oxygen would otherwise act to the hindrance of its action on the nitrogenous substances, whilst alkalies and water hold the uric acid dissolved, and promote the changes in the tissues. By these views, the relation of gout to acidity, to uric acid, and oxalate of lime calculi, is most plain. They all arise from the same cause, the want of action of oxygen. (22.)

The inhalation of ammonia gas in certain states of the mucous surfaces, has been recommended by Mr. Smee. When we allow the fumes of ammonia to come in contact with the eye or nose, we are aware of their stimulating property; there instantly follows an increased secretion from the mucous surfaces. When the same vapour is admitted into the mouth, we find that the glottis does not resist its intrusion, and it is found to pass into the innermost recesses of the lungs, and instead of producing disagreeable effects, causes sensations which are extremely grateful. The effect of this inhalation is to cause the dry passages to be lubricated with an increased secretion of mucus, and the previously inspissated phlegm is now loosened and easily expectorated. This seems to be a valuable suggestion in many cases of chronic bronchitis, where we are in the habit of combining the sesquicarbonate of ammonia with the several expectorants. The liquor ammoniæ in common use, is generally strong enough, but it is perhaps better to commence with a weaker solution. If the liquid be placed at the bottom of a common bottle, the patient may apply his lips to its mouth and draw in his breath, when he will inhale a certain quantity. Two, three, or four inspirations will in general be sufficient at one time, but this may be repeated several times a day. A more convenient apparatus however, is the common inhaling bottle, sold in most shops, and now generally used for the inhalation of the vapour of iodine, conium, and other medicines. Since the publication of Mr. Smee's paper, we have tried the same thing in that peculiar dryness of the fauces which often accompanies affections of the kidneys, and especially diabetes, and we may add that it has been attended with considerable though temporary relief. It may also be used in chronic hoarseness, in a relaxed, swollen, and œdematous state of the mucous membrane resulting from various causes; in cases of incipient cynanche tonsillaris, in syphilitic ulcerations of the throat, in old standing cases of asthma. Of course we need not add that it would be deleterious in all cases where acute inflammation is going on. (23.)

One of the most interesting and curious papers which we have lately seen, is that by Dr. Buckler, of Baltimore, published in the Maryland Medical and Surgical Journal. It is on the subject of Hæmostasis, and embraces opinions, which although supported by striking cases, we feel rather diffident in adopting, till further experience confirms their correctness. If the means used by Dr. Buckler to arrest the flow of blood be found on further trial to act on the general system in the way he affirms, we shall certainly possess an important addition to our remedial powers in many of the most dangerous and most rapidly fatal affections which we have to encounter. The object to be had in view in Dr. Buckler's means

of hæmostasis, is to fill any particular limb, or even all the limbs, with blood, by arresting its course through the great veins and branches, and by this means depriving the trunk and the several vital organs of a considerable portion of their blood. This fluid in short is *detained* in the extremities by ligatures placed round them, and the blood is thus arrested; the limbs become gorged, but the body generally contains considerably less blood than usual. This practice, if found successful, (and it has been so in Dr. Buckler's hands), will be valuable to prevent hæmorrhage, to relieve inflammatory engorgement in parenchymatous organs, or inflammations of membranous tissues, to remove simple vascular congestion, and to restore the balance of the circulation. The process consists simply in tying a bandage round a limb sufficiently tight to arrest the veinous circulation, while the arteries are allowed to pulsate. The veins thus become swollen, and appear as if they would burst; all the blood they contain being thus as effectually withdrawn from the general circulation as if it had been drawn into a basin. If this be done on all the extremities at once, the skin becomes relaxed, and the pulsation of the heart and arteries weakened; and if the patient have previously been weakened by loss of blood, or by disease, so that the vessels shall be partially empty, we shall then find the skin to pour out the most abundant perspiration; the patient complains of feeling light about the head, of sickness, and weakness; and we shall find the carotids pulsating feebly, and all the symptoms of syncope threatening. There are many cases in which it is very difficult to produce syncope, owing in some measure to the difficulty of the blood being extracted from the brain, from the circumstance of the heart and lungs being so gorged, that the downward current from the brain is prevented: this would be obviated by detaining a portion of the blood in one or more extremities, until our object is accomplished, when we could at pleasure allow the fluid to return to the general circulation. Then again, there are cases in which syncope takes place from the slightest causes, and in which the horizontal position does not remedy the evil with sufficient rapidity, but by compressing the veins of the neck, and allowing the carotids at the same time to pulsate, we may rapidly relieve this state by detaining the blood in the cerebrum: and even when the patient remains in the upright position, this method will generally succeed without placing him horizontal. But the most important object which this means will enable us to accomplish, is to relieve internal organs of congestion, and to assist general or local blood-letting in the subduction of inflammation. In short, according to Dr. Buckler, "hæmostasis accomplishes what no other known remedy is capable of doing. It puts syncope under our control, both as to duration and degree. It is capable of exerting, under given conditions, a more powerful control over the circulation than the lancet, antimony, or digitalis, and controls the heart's action, without exhausting the vital forces, or giving rise to ill consequences, which the protracted use of most of the sedative agents is likely to do. And finally, hæmostasis in the hands of judicious practitioners, must prove a means of saving an incalculable amount of human blood." (24.)

We perceive that the Indian hemp continues to be used by practitioners as a substitute for morphia, and other preparations of opium. We publish a case of neuralgia where it was beneficial. The dose was forty-five drops of the tincture of hemp resin (strength three grains to the drachm) to be given every morning, or oftener when the pain returned. This is but a very small dose, and we suspect will require to be greatly increased before its powers can be depended upon: indeed, Dr. Lynch was prepared to increase the dose to at least double the strength, had not relief been obtained: and this dose might with safety be increased to 120 drops or six grains. (25.)

Dr. Abercrombie has written an interesting paper on stammering: respecting which he has observed a few facts which may lead to a material improvement in the treatment of the affection. Stammerers never stammer in singing; nor when the voice is elevated to a particular pitch, as during conversation in a crowd or in a carriage on a rough road; on the contrary, they stammer when endeavouring to speak when the lungs have become emptied of air or nearly so. Amongst other indications of treatment therefore, the patient should accustom himself never to speak except with a full and continuous current of air proceeding outwards from the lungs. The affection is not perceived to be owing to any defect in the organs of speech, and if he would speak in that tone of voice as if he were calling to a person at a distance, or in a tone resembling singing or chanting, he would probably find himself considerably improved: and for this purpose, Dr. Abercrombie recommends that the person should read aloud several times a day from an author whose style is somewhat declamatory. "In doing so he should be made to read in a high-pitched tone, and to stop frequently and take a full breath, so as to have the voice thrown out with a force, beyond what is required for ordinary reading or ordinary conversation. With this view, it is necessary to make him stop and take a full inspiration much more frequently than would be required by any other person. In particular whenever he feels the tendency to hesitate at a word, he is to be taught to stop instantly, take a full breath, and then try it again." (26.)

We have published several papers on the efficacy of the oxide, the nitrate, and the ioduret of silver in different diseases, and especially in those which affect the mucous membrane of the stomach, but we have not seen any cases published previous to those of Dr. Patterson, in which its efficacy in *hooping cough* was remarkable. In this disease it may be given in doses varying from the eighth to a quarter of a grain, according to the age, three times a day. In the cases related by Dr. Patterson, the cure was complete in about three weeks, but an improvement was visible from the very commencement of its exhibition. This medicine has also been valuable in several other affections in the hands of this physician: in some cases of protracted leucorrhœa its use was combined with alum lotion; and in painful and scanty menstruation, an affection which so often baffles all our remedies, it has been found beneficial.

In these cases it is to be given in half grain doses, increased to two grains, twice a day, during the ten or twelve days previous to the expected return of the menses, and as soon as the patient perceives the accession of the discharge, and while it continues, she is to take the ioduret three times a day, but as soon as it declines she should omit the medicine altogether for a fortnight. This is one of the most common and troublesome affections which we meet with, and we shall be delighted if future reports of the activity of this medicine in this disease confirm its value. (28.)

The dread of discolouration of the skin produced by the continued use of this medicine has been kept constantly in view by practitioners, and various experiments have been instituted to counteract such a deformity. We have given it in very large doses and continued its use for a considerable period, and we never yet noticed this so much dreaded appearance in our own practice: it is well, however, to be aware of the circumstance, and as far as possible to avoid it. Dr. Graham, in one case of fourteen years standing, has succeeded in changing the disagreeable blue tint to one of a brownish hue, by using the hydriodate of potass rubbed up with tinct. saponis, as an external application. It was well rubbed into the face night and morning, and the patient exposed himself as much as possible to the action of the sun's light. It was then used in combination with the ungt. hydrarg., and afterwards in the form of a strong solution in water. (29.)

M. Mialhe has discovered that hydrated protosulphuret of iron, a perfectly inert substance, instantly decomposes corrosive sublimate; protochloride of iron and bisulphuret of mercury, two inert substances are formed. This preparation will probably also be found equally efficacious as an antidote to other poisonous salts, as those of copper and lead. (30.)

Dr. Katona, of Borsoder, has been lately trying rather a novel experiment, viz. inoculating children with the fluid taken from the vesicles of measles, or with a drop of the tears of a patient in this complaint, and out of 1122 patients inoculated in this way, in a very severe epidemic in 1841, only seven per cent failed, all the rest had attacks of measles in a very mild form and did well. Dr. Elliotson some time ago suggested the same experiment, but we forget whether he brings forward cases to prove the utility of the practice. Dr. Horne, of Edinburgh, in his "Clinical facts and experiments", published in 1758, refers to the same subject, but we think he failed, probably from the way which he inoculated. Instead of taking the secretion from the vesicles or from the tears as Dr. Katona did, he used a little blood taken from the exanthematous patch; many of his cases failed altogether in taking effect, and in many others the disease was as severe as when taken in the usual way. On the other hand, Professor Spranza, of Mantua, inoculated more recently several individuals with blood drawn in this way, and succeeded in all his cases. Dewes and Chapman in their trials of the same method in the Philadelphia Dispensary, in 1801, failed in producing the same effect. A similar process of inoculation was

some time ago attempted for varicella, but from careful experiments it seems evident that genuine lymphatic or infantile chicken-pox cannot be propagated by inoculation. (31.)

Breathing an atmosphere impregnated with the fumes of saltpetre has been found beneficial in some cases of asthma—immerse thick porous paper in a solution of this substance, and hang it up to dry. At the approach of the paroxysm, inhale the vapour by burning it in a room, or smoking it in a tobacco pipe. (34.)

Dr. R. H. Allnatt draws our attention to the use of creasote as an injection in leucorrhœa. His formula is twenty minims of creasote with two drachms of solution of potash in eight ounces of water, to be used as an injection three times a day. From the effect of this remedy on other mucous surfaces, and its power in checking excessive suppuration, we think it may prove valuable in this troublesome disease. (36.) M. Steenkiste, in the same affection, has been trying iodine injections with advantage. His formula is four scruples of iodine, sixty of alcohol at 25°, and 125 of common water, of which about thirty scruples are to be thrown up the vagina, and repeated next day if necessary. The symptoms will at first be aggravated, but will be found eventually to be mitigated if not cured: in one case the vagina was filled with charpie soaked in a solution of iodine. (37.)

Some time ago Dr. Copland pointed out the value of turpentine in internal hæmorrhages; and since that time many practitioners have been in the habit of using it in these cases; but we think its value is not yet duly appreciated, and we are glad to see it so highly extolled by Dr. Willshire, who regards it as peculiarly valuable as an astringent when absorbed into the circulation. Its effect on the capillaries is remarkable. In cases of hæmoptysis it will often succeed in arresting the discharge of blood when other remedies have failed, and it has one great advantage, namely, it may be given both in the active and passive forms of the disease. In the more active forms, if given in large doses, it reduces the powers of the heart and constringes the capillaries, and in the more passive forms, if given in smaller doses, it strengthens the minute vessels and alters their powers so as to restrain their sanguineous effusion without lessening the vigour of their vital power generally. (39.)

There is perhaps no subject of operative surgery which has lately engaged our attention, more interesting and important than that of removing diseased ovaria from the abdomen, by the large peritoneal section from sternum to pubes. A succession of successful cases published by Dr. Charles Clay of Manchester, and Mr. Walne of London, added to those previously recorded by Mr. Lizars of Edinburgh, and Dr. Macdowal of Kentucky, places this among the legitimate operations of surgery; and shews the almost frightful extent to which the abdomen can be exposed with impunity. In article 51 will be found a series of observations by Dr. Clay, which cannot fail to be interesting to the whole profession. For many years, two operations have been recommended, but seldom practised, for the removal of diseased ovaria; one called that by the small

incision, or the minor operation, the other by the large incision, or the major operation. In the minor operation, the incision is extended only a few inches through the abdominal parietes, through which the ovarian sac is punctured with a trocar, and when emptied of its contents, the sac itself is drawn through the incision, and its pedicle tied and separated. The major operation consists of an incision extending from the sternum to the pubes, so as to expose the whole tumour at once, and, after carefully removing all adhesions, to tie the pedicle and remove the diseased mass entire. We cannot but agree with Dr. Clay in his observations as to the relative value of these two operations, when he says, " if it were positively certain that the ovarian tumour was composed of only one, two, or even three cysts, provided they could be defined and punctured, if it were equally certain that no adhesions existed beyond the pedicle, and if we could be assured no part of the tumour was consolidated, then I should say the minor operation of Mr. Jeaffreson would be the only justifiable one; but if any of these objections exist, I am decidedly of opinion that we had better let the patient alone. It would be difficult to puncture more than one cyst; it would be impossible to draw the cyst through a small opening if adhesions existed, without doing irreparable mischief; it would be equally impossible to extract through a small opening unpunctured smaller cysts, or a portion of consolidated tumour. Now, let the reader suppose a case of more sacs or cysts than one or two, or of one with a large consolidated mass with or without cysts, or one with adhesions though not extensive; and then let him imagine himself employed in bringing away this tumefied mass by dragging it through a small opening of one and a half or two inches [or even three and a half inches, according to Dr. Blundell]. And yet all these circumstances may and actually have occurred, and ought to force us to resort to the major operation, which has not only been much more successful than the other, but enables the surgeon at once to meet every difficulty." By this operation " there is plenty of room for cutting asunder the adhesions, however numerous, the whole mass may be removed entire without puncturing the cysts, thus avoiding the disagreeable circumstance of the fluid of the cyst escaping into the abdominal cavity, perhaps one great cause of death in the minor operation; and lastly, we have now abundant proof that peritoneal inflammation is not a whit more excited by a bold opening than by a smaller one. It must also be borne in mind that the tearing away of the adhesions, unless very recent ones, is entirely avoided by the operation of the large incision." We have carefully perused all the cases published of late, and we cannot but agree with Dr. Clay: indeed the operative surgery of the abdomen is probably in its infancy, and we may yet live to see this cavity subjected to much more extensive manipulation than at present we dare venture to express; at any rate, these successful extirpations of diseased ovaria, and extensive incisions through the peritoneum, prove that there is not really so much danger from wounds of this membrane as has been generally supposed, and that a large incision is no more

dangerous than a small one; and they prove a still more startling fact, that these operations are far more relatively successful than those which are called the capital operations of Surgery, such as lithotomy and amputation. (51.)

The removal of stone from the bladder, by the operation of Lithectasy, as described by Dr. Willis, has hitherto attracted but too little notice. Perhaps it is that a new kind of practice is looked upon with suspicion till a sufficient number of successful cases bear testimony to its utility and safety. The opinion seems to be gaining ground amongst our best surgeons, that the dangers of lithotomy consist in the too free use of the knife in the deep incisions, and that the most successful operators have been those who have made free external, and very small internal incisions; trusting more to a certain degree of stretching, or dilatation, in order to enter the bladder, and thus preserve that organ as free from injury as possible. It is probably for the same reason that lithectasy may some day prove a more useful improvement than is now generally acknowledged. It is well known that Sir Astley Cooper, in the year 1819, performed this operation, at the suggestion of Drs. Neil and James Arnott. It consists simply in opening the urethra upon a grooved staff, in the mesial line, behind the bulb, to the extent of a few lines, and then making gradual dilatation by means of the fluid pressure dilator of Dr. Arnott, " consisting of a cylindrical tube of silk, lined with the thin gut of a small animal to make it water-tight, and fixed upon a canula which traverses its axis, and having attached to its outer end a syringe guarded with a stop-cock, by which it may be forcibly distended with water or mucilage. This instrument when empty, exceeds but little in size the bulk of the canula or catheter with which it is connected, and is therefore easily introduced along the groove of the staff into the bladder; and when there, it can be gradually distended to its utmost limits. We think that Mr. Elliot makes some useful suggestions with respect to this operation. He thinks it well, previously, to accustom the urethra to the presence of a foreign body, by the use of bougies, gradually increased in size, so as at the same time to produce a certain degree of preparatory dilatation. He also recommends that the external incision should be free, " since if the prostate were unfit to undergo the process of dilatation, either from great rigidity, as is frequently found in old subjects, or from morbid irritability, the operation could be at once completed by lithotomy." Mr. Elliot also suggests various improvements in the dilator, as, that it should be cylindrical and not tapering towards each end, as it will then preserve its situation more easily when introduced, &c. We think his suggestion a very proper one, that the dilatation should be not only gradual, but at intervals of a quarter of an hour at a time, instead of being continued for thirty or forty hours. It seems surprising that these parts can be dilated so completely, so easily, and so safely, and yet that surgeons have not tried the practice more generally. Mr. Elliot states, that although he continued the dilatation for twenty-five hours, he has no doubt that a sufficient degree of dilatation was

accomplished in three hours, since no additional fluid was injected after that period; and he could easily introduce two fingers along with the scoop into the bladder, and if necessary, could have extracted a stone as large as a hen's egg, or four and a half inches in circumference, the size of the instrument. Mr. Elliot remarks, that his patient, from beginning to end was never in danger, that "the presence of the dilator effectually prevents any oozing, as well as the injurious contact of the urine with the raw wound. There was no chance of shock, no risk of peritonitis, infiltration of urine, inflammation of the veins of the neck of the bladder, nor any of the grave sequelæ that too often supervene on the operation of lithotomy." (52.)

With respect to the extent to which the deep incisions in lithotomy may be carried with safety, enough has been said and written on both sides of the question to confuse the judgment of even an experienced surgeon; most eminent men are here opposed to each other. We believe, however, that of late, with the exception of Mr. Syme and a few others, the most numerous and eminent converts have been to the opinion that however extensive the external incision may be, that through the prostate should be very limited. Mr. Martineau has always been considered a great authority on this subject, and although it has frequently been represented of him,—and amongst other eminent writers, even by Mr. Samuel Cooper,—that he made his incisions into the bladder rather extensive than otherwise, we have now the authority of an eye-witness, Mr. Dalrymple, whose father we believe was Mr. Martineau's colleague in the Norwich Infirmary, that such was not the case, but that his deep incisions were very limited. But if the surgeon be of the opinion that such incisions ought to be of small extent, he cannot always be convinced whilst his knife is at the bottom of a deep wound, how far his incision may be carried: he cannot be certain whether the knife will divide the parts in question to the extent of four, five, or eight-tenths of an inch; and it is certain that in lithotomy, the parts have been found after death to have been divided in many directions instead of always in the right one. Even the gorget, which is on many accounts a bad instrument, cannot give any certainty in this respect. In our 53d article, will be found a description of a staff by Mr. Bryan, which we think very likely to prove a useful improvement, in regulating with precision the size of the deep internal wound. This staff is straight to within an inch and a half of the end, which is curved, so as to pass readily through the urethra into the bladder; but the groove, instead of being on the convex is on the *concave* side, so that when the instrument has entered the bladder, it is to be turned with the point downwards and outwards, corresponding to the intended incision through the prostate. The knife is furnished at its extremity with a slight shoulder, so as to run readily to the end of the groove, where it is stopped, and thus limits the incision very accurately: the point of the knife cannot get any further, so that the bladder even if empty is in no danger of being injured, and the operator need not fear either going

too deep, or not deep enough; the end of the groove will be a safe guide to him. (53.)

We think the operation for cleft palate has been improved by an ingenious suggestion of Mr. Maclean, of Dublin, and carried into effect by Sir P. Crampton and Dr. Cusack. It consists in the mode of tying the ligatures, a part of the operation of acknowledged difficulty. After the ligatures are passed through the edges of the fissure and brought out at the mouth, their ends are to be passed through a small perforated metallic bead, such as are used in making purses; the bead is then to be pushed down along the ligatures, closing them as it descends, until it touches the approximated edges of the wound; it is then to be compressed by a pair of strong blunt pointed forceps, and the ligatures are thus firmly secured, without a knot at the required degree of tension. This ingenious method of securing the ligatures might be extended to other surgical operations where a knot would be difficult to tie, such as, applying a ligature to hæmorrhoidal tumours and polypous masses, which are situated in parts difficult of access; in short, with some modifications, we have no doubt the principle might be made exceedingly useful in many surgical operations where parts to be tied are deep seated, in the same way as we should apply the double canula in polypi of the womb, &c. (55.)

In the treatment of hydrocele by injection, there is often considerable time lost during its cure by the length of time occupied in the absorption of the injected fluid. The inflammation may subside in a few days, but a month often elapses before the liquid is absorbed. M. Lisfranc hastens the cure by making a second puncture on the sixth day, or when the inflammation has ceased, for the purpose of emptying the tunica vaginalis, thus sparing nature the task of absorption. (56.)

The case of aneurism of the external iliac artery published by Dr. Bellingham, is interesting in two points of view. It is seldom, if *ever*, that the external iliac artery has been tied for an aneurism of this vessel, or in which a ligature has been applied successfully so closely to the bifurcation of the common iliac, and proves that, although the contiguity of a neighbouring branch may retard, it does not prevent the adhesive process from closing up the vessel. It proves what Mr. Travers says in the sixth volume of the Medico-Chirurgical Transactions, "that after the proper application of the ligature, the adhesive process is established in an arterial trunk in equal time, whether its branches are contiguous or remote." Indeed, as Dr. Bellingham says, "the recovery of the patient in this case shews that a large artery may be successfully tied at the distance of half an inch from the point at which a branch nearly of equal magnitude comes off." Another circumstance connected with this case is the value which attaches to Mr. Trant's aneurism needle, which instrument has not been sufficiently tested by the profession. It will, however, be found of essential service where a ligature has to be applied to any deep seated vessel. When the instrument, armed with the ligature, has been passed under the

vessel, a spring hook is gradually projected from the handle by the operator, and passes direct to the point of the needle, where it takes hold of the ligature, which is then drawn up from the bottom of the wound by the surgeon and tied in the usual way. (57.)

Some of the most troublesome and incurable affections which the practitioner has to manage, are those of involuntary seminal discharges brought on by excessive masturbation, or a too great indulgence in sexual intercourse. Mr. Phillips has published a very interesting paper on this subject, bringing forwards the views and practice of Lallemand in his "Observations on the diseases of the genito urinary organs," published some years ago, but which have never been extensively known by British surgeons. By the constant abuse of the sexual organs, whether by masturbation or by indulging too freely in sexual intercourse, there is often set up a continued irritation in or about the ducts connected with the testicle: in some cases this irritation may have its origin in the rectum, and is thence communicated to the seminal ducts, but from whatever cause this irritation may be produced, it gives rise to more suffering than we have hitherto supposed, and we are afraid that it is an evil more extensively prevalent than we had any suspicion of:—since the publication of Mr. Phillip's papers, he has been consulted by numerous patients on the subject, but chiefly by medical men and medical students, who may be supposed almost exclusively to read the medical journals. Mr. Phillip's mode of treatment is simply to find the irritable part and then to apply the lunar caustic to it. He examines the urethra with an exploring instrument, and for this purpose he uses an elastic catheter, with which the point of the urethra which is most sensitive is accurately noted. "The instrument must be passed on carefully until urine passes along it. Observe how far it has penetrated, and having noted this, you must arrange your caustic apparatus so that it shall not reach so far by an inch, because the prostatic portion of the canal is not commonly implicated in the irritation. The point upon which the caustic is to be applied is, as near as practicable, about the region of the orifices of the ejaculatory ducts." It often happens, however, that the whole or several parts of the urethra are very sensitive, and it becomes difficult to know from this circumstance which is the most tender and irritable; but when, for example, it is found that it is seven and a half inches from the orifice of the urethra to the bladder, which is known by the urine passing along the catheter, and when it is further seen that an acute pain is felt at a little more than six inches, we may confidently cauterize the space between the sixth and seventh inches, satisfied that the orifices of the ejaculatory ducts will not escape. (58.)

Mr. Bennett Lucas recommends a mode of treating gonorrhœa, which, although not new, is not much practised; and it is only from the well known practical character of Mr. Lucas that we have ventured to publish his peculiar mode of treating this affection, well knowing that his opinion may be looked upon with some confidence. It is only to the first stage of the disease that this treatment is

adapted before the inflammatory stage has commenced: in gleet it will fail altogether. It consists in compressing the urethra with the left hand about two and a half inches from the orifice, and injecting up to this point a very strong solution of the nitrate of silver in the proportion of twenty grains to the ounce, and often as strong as thirty grains to the ounce. This must act by destroying the specific virus and substituting in its place a simple inflammatory action. (59.)

It has been too frequently the custom for surgeons to amputate the leg below the knee in cases where neither Mr. Hey's amputation between the tarsus and metatarsus, nor that of Chopart's, which leaves only the astragalus and os calcis, could be of use. So long as the disease exists in the foot below the astragalus and os calcis, Chopart's operation would be invaluable, and when it exists still lower down, that of Mr. Hey's must be equally if not more so, but even where the astragalus or os calcis, and even where the ankle joint is implicated, amputation of that joint and taking off the diseased extremities of the tibia is now practised with success; thus enabling the patient to walk with very little artificial assistance, and to a very considerable extent diminishing the danger of amputation below the knee. When we consider that the diseases which have hitherto required amputation of the leg below the knee seldom affect the leg itself, because, when they do so, amputation above the knee is generally required, we shall see at once that an operation by which the leg is saved is not only practicable, but of the greatest consequence: and this observation extends also to diseases of the foot for which amputation at the ankle joint will often be found exceedingly useful. This is well exemplified in a case related by Mr. Syme, in which the probe passed easily into the substance of the astralagus and os calcis. Here, therefore, it is evident that no partial amputation of the foot, as that of Chopart's or Hey's, would have been of use, and excision of the diseased portions, as is so often practised in the elbow, would not have been advisable. In cases therefore of compound dislocation of the astragalus and caries of this bone, with its adjoining articulating surfaces, amputation at the ankle joint ought generally to supersede the old practice of amputation below the knee: and even when the whole ankle joint is diseased, and the articulating extremities of the tibia and fibula are implicated, these diseased portions may be safely removed by the saw, as the caries seldom penetrates to any great depth into the cancellated texture, and much more frequently exists almost exclusively between the astragalus and os calcis, and not between the astragalus and bones of the leg. Three very important advantages therefore result from this operation: 1st. A more comfortable stump is formed. 2nd. The risk of life is much less. 3rd. The limb will be much more useful and seemly. (60.)

The removal of internal hæmorrhoids by the ligature instead of the knife, is now too well known to require notice. We would here, however, refer the reader to the account of the wire ligature, which is often found more efficacious than the common one. After bringing

the pile downwards by the ordinary methods, Professor Horner, of Philadelphia, passes a strong needle, armed with a ligature, through the upper part of the base of the tumour. The needle is then removed, and the two ends of the ligature tied together so as to form a loop. A stout awl is then passed in a line parallel with the ligature through the lower part of the base of the tumour. This gives a perfect command over it. The inferior third of the base of the tumour is now detached from the internal sphincter muscle by means of a scalpel. A wire noose is then passed round the still adherent base of the tumour, and drawn perfectly tight by means of a double canula, after which the awl is removed. The tumour may now be punctured if necessary. It is dead in about five hours, and may be cut off at a little distance from the wire noose. (63.) When the use of the ligature has been determined upon, this mode of applying it may occasionally be an improvement. Dr. Houston, of Dublin, has published an interesting paper on the same subject, in which he condemns the use of both knife and ligature in certain forms of hæmorrhoids, and recommends that the diseased parts should be destroyed by nitric acid, which possesses some peculiar advantages. The kind of disease to which this escharotic is more particularly applicable, is that which is called "*the vascular tumour*," called by different names, as hæmorrhoidal excrescence, erectile tumour, spongy hæmorrhoid, varicose tumour, internal hæmorrhoid, &c. It is an affection of the mucous membrane and sub-mucous tissue, and has generally for its basis a nuckle or bunch of varicose veins, but may also be a distinct and independent growth, the result of some other irritation in this region. Every surgeon has his fears when he uses either the knife or the ligature in such cases, and if both the means could be supplanted by something more safe and efficacious, it would be more frequently resorted to. Dr. Houston points out the properties of *pure nitric acid* as an escharotic upon which we may place much dependence, both for its safety and efficacy in those cases where a superficial destruction of the part to be removed is all that is required. "This acid at the density of 1500 destroys on the instant the vitality of the part to which it is applied, by the production of a chemical decomposition of its solid and fluid elements. The depth of the slough which is to follow may be regulated in some degree by the quantity of acid laid on the part; and its extent, laterally, may be confined with sufficient exactitude to the limit of its first application by instantly smearing the whole over with olive oil, which neutralises its further corrosive powers by combining and forming with it a new but no longer corrosive compound." By this application, therefore, the surgeon may remove the tender, tumid, and bleeding tumour, with little pain and danger, and in the cicatrization which rapidly follows, a radical cure is effected. The way the acid is to be applied is as follows: let the patient strain as at stool so as to cause the tumour or tumours to come into view, then let a piece of wood cut into the shape of a dressing-case spatula be dipped in the acid and rubbed on the tumour to the extent desired. If a superficial slough only be re-

quired, one application will be sufficient, if a more deep one, then two or three applications may be made in quick succession, which being finished, let the part be well smeared over with olive oil. (62.)

In volume V, article 52, we detailed the practice of Mr. Liston and Dr. Payan in the cure af vesico-vaginal fistula, viz., cauterization at very long intervals, from two to six months, which gives the parts an opportunity to contract as much as possible after each application of the remedy. The contraction resulting from a severe burn does not take place all at once after the sore has healed; it is a gradual process, and goes on contracting for a considerable time after it has cicatrized: with this object, it is certainly an important improvement in the treatment of vesico vaginal fistula to give the cicatrix time to contract fully before again applying the cautery. But it will happen in some cases that the most patient perseverance in this and every other mode of treatment will completely fail, and the surgeon is then obliged to resort to the best palliative means of preventing the constant dribbling of urine through the wound. This will almost necessarily consist in well regulated pressure upon the fissure, and for this purpose a variety of methods have been suggested; but none have in our opinion, been adopted, which are so likely to be successful, as the simple contrivance of Dr. Reid. It consists of a common india rubber bottle, of moderate size and pyriform shape. To the neck of the bottle is attached a mount containing a female screw, at the side of which is a small stop cock; or the air valve used in Mackintosh cushions may be substituted. By means of a small *condensing* syringe, of the size and shape of the common breast pump, the distal end of which ends in a small male screw, corresponding to the one attached to the bottle, the bottle can be distended to the size required. It should be introduced empty and well oiled into the vagina, and afterwards filled with air to the size which is necessary to produce the required pressure on the fistulous communication, and then the stop cock is to be turned and the syringe withdrawn, a napkin being applied and fastened as usual. The bottle is to be emptied every evening, and withdrawn, so as to allow of the vagina being syringed out with tepid water and the instrument to be cleaned; it must then be re-introduced. Dr. Reid suggests that as the caoutchouc covering will be acted upon by the constant contact of the urine, an oil-skin covering would be useful. We have long thought that this kind of instrument would be useful, not only in cases of this kind, but also in cases of prolapsion of the womb. It is on the same principle that Mr. Halpin, a short time ago, invented an apparatus to assist in the reduction of retroversion of the womb. Dr. Arnott's practice of fluid dilatation, which, however, has been almost exclusively used to dilate the urethra, partakes of the same principle: and we hope ere long to see the common wooden and indian rubber pessaries banished altogether, and some simple contrivance on the principle above described substituted. (64.)

There are few surgeons better acquainted with the nature and treatment of syphilis than Mr. Langston Parker, of Birmingham,

and we may therefore safely recommend his mode of treating a chancre. Instead of using the nitrate of silver either solid or in solution, so as to convert the specific ulcer into a common one, (which may be done when used very early), he prefers using a much more powerful escharotic, so as at once to disorganise the tissue to a depth coequal with that of the chancre. This the nitrate of silver does not always accomplish; it often, on the other hand, converts the sore into a very irritable one, without destroying its specific character. By using a more powerful escharotic, this is more safely and certainly done; and for this purpose, highly concentrated nitric acid, the acid nitrate of mercury, the acid nitrate of silver, or the potassa cum calce of the London Pharmacopœia may be used. The second of these remedies is made by dissolving a drachm of the subnitrate of mercury in an ounce of nitric acid; the third by dissolving the same quantity of the nitrate of silver in the like quantity of acid; but Mr. Parker prefers the potassa cum calce, which is to be made into a paste of moderate consistency with spirits of wine, at the time it is wanted for use, and the sore and its edges covered with it: it may remain on for half a minute or a minute, or even longer, according to its effects. After this the caustic must be all removed by means of a fine bone spatula, and the black eschar left may be covered with a poultice or any other simple application. All the parts touched by this application are at once destroyed, and on the separation of the eschar we find a clean granulating sore left. We must refer to Mr. Parker's paper for his remarks on the constitutional treatment of syphilis, but we will here shortly advert to his method of treating a bubo which we think equally judicious as his mode of destroying a chancre. If a bubo is forming, insist upon a strict regimen and absolute rest, if possible; smear the part over with mercurial ointment, over this a cold linseed poultice and a piece of oiled silk to keep it moist, confining all by a bandage. The best way, however, is to paint over the enlarged gland, night and morning, with a strong solution of iodine and hydriodate of potass; one scruple of iodine, two scruples of hydriodate of potass, and one ounce of water. Pressure and a slight mercurial course will hasten its dispersion. If suppuration takes place, how is the abscess to be opened—not by a free incision as is commonly done, but by several very small punctures with a lancet over the thinnest part; through these the matter oozes till the cavity is empty, and a weak solution of the sulphate of zinc is then to be injected, of the strength of two or three grains to the half-pint of water. When the abscess is quite empty place a large compress over it. A weak solution of iodine may occasionally be substituted for the zinc in the following proportions: Iodine four grains, hydriodate of potass eight grains, water eight ounces. Mr. Parker thinks that the same method may be extended to the treatment of chronic abscesses. (65.)

Dr. Strohl differs materially from Mr. Parker in his treatment of chancre, and although we give his peculiar way of treating these sores, we must say that in the specific cases of syphilis we should not depend upon it. He assures us that his local

treatment of chancre is one of the most successful yet practised. It consists in cauterizing the sore if it is not much inflamed nor extensive. If it is so, he employs sulphate of copper instead, and dresses the part five or six times a day with charpie soaked in a solution of about a grain and a half of sulphate of copper to an ounce of water. The sores will generally heal in about twelve days. At other times he uses an ointment composed of two grains of cyanuret of mercury to an ounce of axunge. This ointment is spread upon a piece of linen corresponding to the size of the sore. When this is too painful, it must be taken off for a time and replaced in a weaker form. When it has been on from four to ten hours, it is dressed with mercurial ointment, or opium cerate. (76.)

We cannot but thank Dr. Robert Hamilton, of Edinburgh, for directing the attention of ophthalmic surgeons to the care which is manifested by the German ophthalmologists in their treatment of different affections of the eye. This especially refers to the choice of seasonable weather for the different operations for Cataract, Artificial Pupil, and Staphyloma. This gentleman, we believe, has lately made a tour through Germany for the express purpose of gaining information on his favourite study, and we hope he will continue his series of papers in the medical journals for the purpose of explaining, more especially, those differences of views and practice which exist between ourselves and our eminent brethren in Germany, on this subject. The season of the year in which operations on the eye are undertaken, has been too seldom attended to. With the exception of Mr. Tyrrel and a few others in this country, there are few surgeons who decline operating on the eye on account of unfavourable weather. Perhaps the German surgeons attend *too much* to this object, and the English surgeons *too little*. At any rate, when we read the remarks of Dr. Hamilton on the subject, and the almost universal observance of the practice in Germany, which undoubtedly possesses the most successful operators in Europe, we are bound to pay considerable deference to their opinion: and although we should not like to relinquish our operations on the eye, which are not few, from October to March, as do the Germans in general, we do think there is considerable advantage in selecting that healthy state of the atmosphere for such operations which is so strongly insisted on by our neighbours. "Good and steady weather", as Dr. Gulz remarks, "with an agreeable temperature, is what we desiderate, and every thing that interferes with this,—the cold and snowy weather of winter, the piercing and chilling blasts of spring, or the very hot season, or a very wet one—we try as much as possible to avoid. And hence May and July, September and October, are the months we prefer." (67.)

In our last volume, we referred to Mr. Wormald's mode of applying the nitrate of silver to the outside of the eyelids in cases of ophthalmia, and to Dr. Hocken's physiological explanation of the modus operandi of this valuable remedy in strumous cases. Dr. Furnivall, of Hertford, finds that painting the lids over with tincture of iodine answers the same purpose. He uses a camel-hair pencil,

and paints the tincture of iodine over the outside of the upper and lower lids, taking care that it does not enter the eye itself: this may be repeated two or three times a week. (69.)

Dr. Hildreth, of Ohio, very strongly recommends the use of creasote mixed up with the strong mercurial ointment, about fifteen drops of the former to half an ounce of the latter, in cases of scrofulous ophthalmia combined with opacity of the cornea. He orders a small quantity to be introduced morning and evening under the upper eyelid, and by that means it is rubbed over the whole cornea. This treatment was found to clear a cornea which was nearly white, much better than nitrate of silver, and to be in every respect a better application than this substance, and it is especially useful when combined with the usual constitutional treatment. It should be applied to the eye of such a strength, that the burning or smarting pain from it shall not continue more than five minutes after its introduction. If too strong, it must be diluted with fresh lard perfectly pure, or with simple cerate. In more chronic cases the application may be made stronger if necessary. (70.)

In referring to what Mr. Liston has called, a variety of false aneurism, we will simply give his own views as shortly as possible in this place, and refer the reader to the case itself, published in the preceding pages. His attention was first directed to the investigation of this kind of aneurism in consequence of meeting with the case so much referred to in the journals, in which the carotid artery opened into a large abscess in the neck. If such cases have before occurred, they have not been satisfactorily explained or properly detected. Occasionally it is possible for all the parts in the neighbourhood of an abscess to be more or less injured by the ulcerative process, the coats of the neighbouring arteries, amongst the rest, becoming denuded by the extension and pressure of the purulent deposit. "The requisite supply of blood to the coats of the vessels is thus diminished, or rather entirely cut off, and as a consequence, ulceration and sloughing, with perforation from without, ultimately occurs." And when this takes place, it is evident that it cannot always be detected, as the signs of an aneurism may not be at all times very evident. This is rendered probable by the case published by Mr. Liston. This happened in a child nine years old, in whom there seemed to be an abscess over the carotid artery at the angle of the jaw on the right side. "Its most prominent point was posteriorly and superiorly at the outer border of the sterno-mastoid. Indistinct fluctuation could be felt, and there was slight pulsation in it immediately over the carotid artery, but on grasping the sides of the tumour no pulsation could be discovered, nor could any be felt inside the mouth." On puncturing this tumour a gush of blood issued out, and Mr. Liston then detected the mischief, and next day determined to tie the carotid artery. The patient ultimately died. (71.)

Lisfranc, in his work, enters amongst other subjects, on that of White Swellings. He offers some very judicious advice as to the treatment. He thinks that it is not always an easy matter to

distinguish the *engorgement* of the soft parts from an enlarged condition of the bone itself, but that in time, the induration often becomes moveable upon the bony parts; these last remaining nearly or quite healthy: in this case the disease spreads from without inwards. We need not particularly refer the reader to the importance of discriminating between those collections of pus which often form outside and those which are inside the joint, as this subject is sufficiently dwelt upon in our English works and particularly by Sir B. Brodie. The most experienced surgeon is often unable to know whether the pus be within or without the joint, and the alternative of amputation decides him in determining to open the collection, and if symptoms follow which denote that the cavity of the joint is exposed also, he proceeds at once to amputate. We quite agree with Lisfranc that in these diseases as well as in most others, both internal and external, *regimen* is not attended to with sufficient method and importance. This applies more especially to chronic surgical diseases and certain tumours and indurations, where engorgements exist and where it would be highly beneficial to let the patient "live upon his own substance" for a time, by diminishing the diet to one half or one third according to circumstances. The reader is no doubt aware of the opinions of Dr. O'Beirne and other Dublin practitioners respecting the remedial powers of mercury in inflammatory affections of the joints. Lisfranc particularly guards us against depending upon this remedy where no inflammation exists, unless in this case it be applied over the part in *thick layers*, to remain in contact with the part, when it acts as an antiphlogistic, and not as in the case of friction as a stimulant to absorption. He is fond of applying the *ioduret of lead*, if properly watched that no injurious excitement be produced; and he finds that in scrofulous subjects, the internal use of iodine, and especially the iodide of potassium, is very useful. The iodide of lead is certainly a valuable agent in many cases, and especially when the cervical or axillary, and perhaps also when the mesenteric glands are enlarged; but it ought to be given internally as well as applied externally. The usual dose internally is from four to ten grains. (72.)

In many cases of fistulous sores accompanied with induration, Lisfranc has found great use from injections of chloride of soda, which, he says, has great power in inducing a plastic secretion, and if these injections fail after being used for several days, they should be suspended, and compression then often succeeds. But if not, the same alternation of injections and compression should be repeated for eight or ten times, and even longer. He affirms, and we think with truth, that these measures frequently fail from want of perseverance. He recommends, also, the cautious use of injections of nitrate of silver and proto-nitrate of mercury; but when the latter is used, it should be with the greatest caution. The same able surgeon thinks that "the therapeutical employment of inflammation in the practice of surgery (*i. e.* the excitement of an acute for the purpose of subduing a chronic inflammation) insisted upon by Dupuytren, is susceptible of a far greater application than it

has yet received." With this view, Lisfranc has revived an operation which has not been in use since the time of Paré, viz. scarification of the indurations surrounding ulcers. They are not to be employed indiscriminately, nor too close to each other. Leeches and poultices may be used to keep down inflammation. With the same view, he oftens employs incisions in the indurated tissues around fistulæ, caries, &c. He gives us an interesting explanation of the cause of the severe hæmorrhage which occasionally accompanies varicose ulcers. In such cases he has found after death that the internal saphena vein was opened and thickened, with the internal coat inflamed. "And when its walls were cut across their circumference in all their thickness, they did not collapse, and the canal, besides being normally increased in size, remained patent—the section resembling that of an artery." Thus it became an inert tube from which the blood, obeying the unresisted impulse of gravity, escaped without any obstacle when the ulceration had taken place. In his treatment of atonic ulcers, he avails himself of several external applications with success, such as monesia, used in powder or as an ointment, and a powder formed of five parts of starch, and one of sulphate of alum, with which the surface of the ulcer is covered. In these cases also, as well as in burns, he is fond of using a solution of chloride of soda to expedite cicatrization. But for this to be useful, the sore must be clean, the granulations in a normal state of development, and cicatrization commenced. When a superficial vein requires obliteration in order to cure the ulcer, he thinks that the subcutaneous section, as employed by Guérin, may be an improvement, although he himself has only performed this once. The operation which he has been in the habit of performing for this purpose "consists in exposing the vein to about the extent of two inches, dividing it by means of curved scissors at each angle of the incision, and removing the portion so separated; an assistant, by compression, preventing the access of air into the vein during its division. Light graduated compresses are applied, and the wound is healed by the first intention." (73.)

So many different applications have been recommended for the treatment of burns, that we feel some diffidence in bringing another before the profession; but the fame of Lisfranc will always be a recommendation to a remedy which he employs. He strongly recommends a solution of the *chloride of soda*, which, he affirms, acts as an astringent and sedative, affording rapid relief to suffering, preventing an increase of inflammatory action, and dissipating this when it already exists. The strength of the solution is to be regulated according to the irritation produced. This should be but slight, subsiding in ten minutes or a quarter of an hour. It acts far more efficaciously when the mucous substance of the skin is laid bare than through the epidermis.

Varicocele is a disease which occasionally demands an operation, if it were for nothing but to relieve the patient of intolerable pain. Formerly the varicose spermatic vein was cut down upon and tied; but this produced such constitutional disorder, that it is but seldom,

if ever, practised. Various means of compression have from time to time been recommended. Some surgeons pass a pin through the skin under the vein, and twist a thread round it so as to press upon the distended vein: others pinch the vein by compressing forceps. Mr. Mayo would recommend the application of potassa fusa to the plexus of veins; and Sir B. Brodie, in one case, simply divided the skin and cut through the varix with a pair of scissors. Mr Wormald has tried an ingenious method of supporting the testicle so as to prevent the veins from being stretched. He passed the lower portion of the scrotum through a soft silver ring, well padded, while the patient was horizontal, and while the veins were comparatively empty; the ring was then pressed together so as to form a much less circumference, and as the testicle remained above it, it rested upon the ring something like a prolapsed uterus upon an oval pessary, and by this simple contrivance the testicle became suspended, and the pain greatly relieved. M. Reynaud's plan is as follows: He passed a needle, armed with a ligature, under the vessels of the cord, and ties it upon a thick cylinder of linen, which is to be interposed between the knot and the skin. The knot is to be tied so as to be easily undone, and tied again when the compression requires to be increased. M. Vidal seems to have improved upon this practice of tyeing and untyeing, by using a *silver wire* of about the thickness of a fine pin. This metallic thread allows of the ligature being tightened or loosened without undoing the knot. After being fastened over the fold of linen, as used by M. Reynaud, it can be easily twisted so as to allow of any degree of compression. (74.)

Bed sores, caused by the patient lying long in one position, are perhaps as troublesome to a surgeon as any thing. A suggestion of Mr. Henry Jackson's, will, we think, prove very useful in such cases; it is, that as soon as any part which we suspect may be the seat of such sores, exhibits the slightest appearance of inflammation, a solution of nitrate of silver, ten grains to the ounce, should be applied by means of a camel hair brush two or three times a day, until the skin has become blackened, and afterwards only occasionally. (77.)

In the treatment of effusion within the joints, Dr. Moritz applies the solid nitrate of silver, or a strong solution (one part of the nitrate to eight or ten of distilled water), to the part affected: the skin at first rises in blisters; this is soon dissipated, and after the scaling off of the dried crust, the joint is seen to be obviously diminished in size. This treatment is repeated till the joint is reduced to its natural proportion. (87.)

The removal of small nævi from the face and other delicate parts exposed to view, is sometimes attended with great disfigurement, especially from the eyelids. Dr. Sigmund recommends for this purpose the acetum plumbi as an outward application. He says that it causes a separation of the epidermis, which cracks and falls off, and the newly exposed surface is to be treated as the layer just removed. In four weeks, by this method, he has succeeded in removing small nævi. We should doubt, however, the efficacy of the

acetate of lead, either in the form of ointment or lotion, to remove these affections. It is very possible that what is called a mother's mark, or a nævus maternus, may be removed by this application, as this is frequently nothing more than a red or blueish colour of the skin, caused by enlargement of the vessels of the skin, without a disposition to increase; and is in reality very different both in the arrangement of its vessels and in its effects from the sub-cutaneous nævus described by Mr. Wardrop, which is a real aneurism from anastomosis as described originally by Mr. John Bell. We need not here remind the reader of the various methods prescribed for the cure of these subcutaneous nævi, as they are described in every work on surgery. Excision, pressure, vaccination, caustic, heated wires, needles, setons, ligatures, and subcutaneous incisions, are the methods which have been usually recommended. The process adopted by Mr. Liston, is certainly one of the best where excision cannot be adopted at once, and where there is not much skin to spare. Instead of at once pushing a needle containing a double ligature through the centre of the disease, he first *elevates the skin*, by careful dissection from the circumference of the nævus, and then pushes the armed needle under the part affected. By this means he preserves a larger portion of skin, and allows the noose to be applied more immediately in contact with the tumour, and thus more effectually strangles it. (88.)

Several cases of aneurism have been lately cured in Dublin by compression; and from the success which has attended these cases, and the peculiar way in which the compression has been applied, we must say that this mode of treatment has been too hastily abandoned by the profession, and we anticipate a great improvement in the treatment of some kinds of aneurism from its re-introduction. The compression formerly used was too insupportable to the patient, and was persevered in with too little intermission. The mode now adopted in Dublin is to compress the vessel with the least possible pressure, and, when this cannot be borne, to partially compress the artery so as to lessen the impulse of the circulation. In a case of popliteal aneurism, published by Dr. Hutton, the compression was made by an instrument adapted to the purpose, upon the femoral artery in the middle third of the thigh, which being insupportable, was removed to the upper part, where the femoral artery was compressed as it passes Poupart's ligament: the compression was maintained for four hours and then relaxed; it was again renewed in a few days, and continued a few hours according to the feelings of the patient. This kind of alternate compression and relaxation was continued for some time, till an artery, about the size of the temporal, was felt pulsating along the surface of the tumour, this being quite solid, much diminished in size, and free from pulsation. The tumour was originally the size of a hen's egg, but in six weeks was reduced to the size of a nutmeg. Two other cases of a similar kind have been treated successfully in the same way, one by Dr. Cusack, and the other by Dr. Bellingham. (89.)

Perhaps tannin is too seldom used by us in cases of hæmorrhage. It has long been used in cases of bleeding from the urinary organs, but we think not sufficiently in cases of uterine hæmorrhage. Its effects are probably not so rapid as we could desire, but where the discharge of blood is not so urgent, it will often prove a valuable assistance, and especially when combined with other means adapted to the particular part from which the blood issues. In our former Retrospect, Vol. VI, article 13, we refer to the use of this remedy in cases of hæmaturia, and mention the well known fact that gallic acid enters into the composition of Ruspini's styptic, used by some eminent surgeons in such cases. It also is an ingredient in rhatany root so much used by the French. The styptic virtues of uva ursi, bistort, tormentil, kino, catechu, gall nuts, &c., may also depend upon the tannin which they contain: and as this substance passes the whole round of the circulation, and is again found in the urine, we may readily suppose that it will have a very powerful effect on the smaller vessels of the system. It is for this reason we should depend upon its efficacy more in those cases where we suspect the smaller vessels and capillaries in fault, than where the large vessels of the womb are pouring out blood:—we should rather depend upon its use, for example, in hæmaturia, menorrhagia, or metrorhagia, when the cause is of a chronic and subacute character, than we should in a case of hæmorrhage after labour, or in those profuse bleedings which sometimes accompany abortion. In a case related by M. Dumas, it was found very useful in a very severe uterine hæmorrhage: but we suspect that the opium, with which it was combined, had a good deal to do in the suppression of the discharge, as this remedy alone will very frequently be quite sufficient to arrest the most severe hæmorrhage from the womb. In Dumas' case, two grains of tannin with a little opium were given every hour. In another case, one of severe accidental hæmorrhage in the sixth month of gestation, in which complete insensibility existed, four scruples of tannin were infused for ten minutes in a pint of boiling water, and then injected slowly into the bowels. When the sensibility returned, the same medicine was administered internally, and in a few hours the patient rallied. (94.)

The chlorate of zinc as an escharotic is perhaps not so generally used as its merits would warrant. We are so accustomed to a certain routine of practice, that it requires strong inducement to cause us to make any change in our old remedies. This substance, however, would often be more useful than potassa fusa or nitrate of silver; according to Vogt and Cauquoin, it exercises an influence over the vital actions of neighbouring parts, and to this circumstance is probably owing its efficacy and the healthy appearance of the sore when the eschar has separated. When used for this purpose a paste is readily made, on account of its deliquescence, by mixing one part of the chloride, and from one to four of wheaten flour; or it may be used externally as a lotion, in the strength of two grains to the ounce of distilled water. Dr. Byron, of Meath Infirmary, has lately been using it with success in some obstinate

cases of lupus affecting the eyelids, nose, and cheek. He applied it in the solid form to the whole surface of the sore. The pain was excessive, and the heat and redness continued two days. The sore assumed a much healthier appearance after the separation of the eschar. It was applied every three or four days to those parts which again assumed an unhealthy appearance, and in one case it was repeated ten times before cicatrization was completed. The same treatment was adopted in eight cases with great benefit, and we think this treatment well worthy of more extensive trial in these obstinate cases.

In cases of phymosis and paraphymosis, it has been suggested to use an application of belladonna to the part before resorting to the knife. An ointment, composed of thirty parts of cerate and twelve parts of extract of belladonna, should be rubbed hourly on the prepuce in cases of phymosis, and on the glands in cases of paraphymosis. If great inflammation exists, a little opium may be added and less belladonna.

If Dr. Lewis Shaw's method of removing the gelatinous polypus from the nose be found efficacious. it will certainly be an improvement on the more ordinary methods of excision, extraction, ligature, and causties. He powders very finely the sanguinaria canadensis, and causes it to be snuffed up the nostril, and the throat to be gargled with a strong infusion. In one case, by repeatedly using these means, the polypus broke in twenty-four hours, and discharged a considerable quantity of gelatinous fluid. The remedy was continued till the whole inner surface of the nose was made raw, and occasionally afterwards. As the case, however, has not been watched a sufficient time, we could not depend upon the treatment. The sanguinaria canadensis is one of the best known aeronarcoties of the poppy tribe.

We are disposed to agree with Mr. Fergusson, that as a means of producing counter-irritation, the actual cautery is too much neglected: people are too much afraid of a heated iron approaching them to allow of the popular objection to this remedy being very easily overcome. The operation resembles too much that of firing horses to become fashionable; but when properly managed, it is an equally efficient, more manageable, and less painful counter-irritant than either the caustic, potash, or the moxa. It is also of the greatest service in arresting hæmorrhage. Mr. Fergusson has found it of use in some obstinate cases of nodes on the tibia. He brings a large extent of surface under the influence of the heated iron in these cases, not so as to cause a slough, but somewhat in the way which is adopted in firing horses; by which means a sudden excitement is produced over a large surface, whilst at the same time the skin is not destroyed, or converted into a slough.

The Third Edition of Vol. I., the Second Edition of Vol. II., and Volumes IV., V., and VI. of this work, may be procured by applying to any Bookseller.

The Second Edition of Vol. III. will be ready on the 1st August.

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